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BLOSSOM BABIES

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BLOSSOM BABIES

How to Tell the Life Story
to Little Children

BY e
M. LOUISE CHADWICK, M.D.

New York: EATON & MAINS
Cincinnati: JENNINGS & GRAHAM

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M. LOUISE CHADWICK

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TO MOTHERS

THERE is much diversity of opinion among thoughtful men and women as to how and when and where and by whom the life story should be told to children, or whether it should be told at all. Some claim that with knowledge of these deeper things of life the child loses much of his frankness and sweet unconsciousness, and that, therefore, it is best not to intrude upon the child's innocence. This view is, however, rapidly giving way to a saner and safer view.

Since it must be admitted that children in this country are precocious and unduly excitable, that they are filled with restless curiosity, and that they learn sex facts at an early age whether the parent wishes it or not, most thinking parents acknowledge that there is no choice for the mother who wishes well for her child but to tell the story herself and so forestall the garbled tales of the street and playground. Again, no child of average power of observation fails, early in life, to learn that there *is* sex. All too often a child scarcely out of its babyhood imbibes a vague sense of shame as the result of unwise remarks that are made in regard to its own innocent and unconscious acts. Again, even the child of the wisest parent must go forth from the home nest; and he will come in contact with children whose sex sense is more or less perverted. These perversions may be the result of impure inheritance, they may have been acquired through polluting experiences, or they may have been fostered by physical abnormalities of which the parent knows nothing. Whatever the source, there are many such unfortunates in the street and in the school; and no child can escape the influence of these befouled playmates, and learn from them a version of sex that will follow him and color his thought and actions throughout his whole life. Each mother should, then, save her own child; it is not only her privilege, but her duty.

Invariably the question arises, How shall the life story be told? Just how, no one authority may dictate; each mother must adapt her method to existing conditions. Some children take it beautifully at the mother's knee; some children take it through the coming of a new baby into the household; others evolve it for themselves from personal observation. But whatever the method chosen by the mother, let it be an unfailing principle that the story be told *honestly*. When the mother tells her child that the stork brings the baby—pretty legend though it be—or that the doctor brings it, she sets upon the child's thought the seal of impurity, for some day the child will learn differently; and with his knowledge will come a realization that beneath his mother's story lay an element of secrecy, and secrecy, with its companion, prurient curiosity, is the cause of much unrest and sin in later life. "As a man thinketh so is he" is particularly true of sex life, insomuch as the sex organism is so peculiarly under the influence of the sympathetic nervous system, that system which responds so strongly to thought and emotion.

Again, let the child be taught *scientifically*, thereby developing a sane, intelligent interest which shall harmonize with those facts of biology with which the child will come in contact later in his school life.

And, again, let the child be taught *æsthetically.* No greater wrong can be done a child than that of robbing him of an æsthetic interpretation of sex, for is it not that that differentiates the crude physical passion of the savage from the transcendent expression of sex as love impulse in the civilized human being? As some one has said, "A man's taste in sex matters is a greater protection than his moral ideals." To a man of fine feeling any perversion of love's great law becomes repulsive, and temptation to low living is removed through negation.

To lay the foundation for proper, healthful, and happy interpretation of sex, let the subject be taught in harmony with the child's own mental laws: first through the vehicle of imagination—personification of plant, insect, and animal life, interweaving here and there those poems, legends, and myths that serve to beautify and enhance the whole. Later more scientific explanation may come; then, as puberty approaches, let both father and mother stand by the child as he is ushered into his first experience of sex consciousness, for the child comes now into a dim personal appreciation of the meaning of the life force of which he has been told. Fortunate is the child in whom prurient curiosity burns not at this epoch, for in this, as in all life experiences, real knowledge gives strength.

Not only has the pubescent child new physical lessons to learn, but synchronously with the development of the sexual organism comes an awakening of the moral and emotional nature. Here, again, the child needs the sympathy of his parents, for new emotions, new feelings are crowding hard upon him—new hopes, new fears, new ambitions, new desires. Life begins to take on a new aspect; dolls and toys are discarded; something within the child will no longer content itself with make-believes; the soul demands real things. Adventure, excitement, society of its own kind—all these the pubescent child demands; and these demands for readjustment, if they would guide their child safely through this troublesome period, parents must understand.

"We are born twice," says Rousseau, "once to exist, once to live; for when the Song of Love sounds in the human heart, then, and not until then, does he truly live."

Lest this song, then, become a requiem rather than a jubilate, let us prepare our children through sympathetic, honest, scientific, æsthetic instruction in all matters relating to the fundamental principles of life.

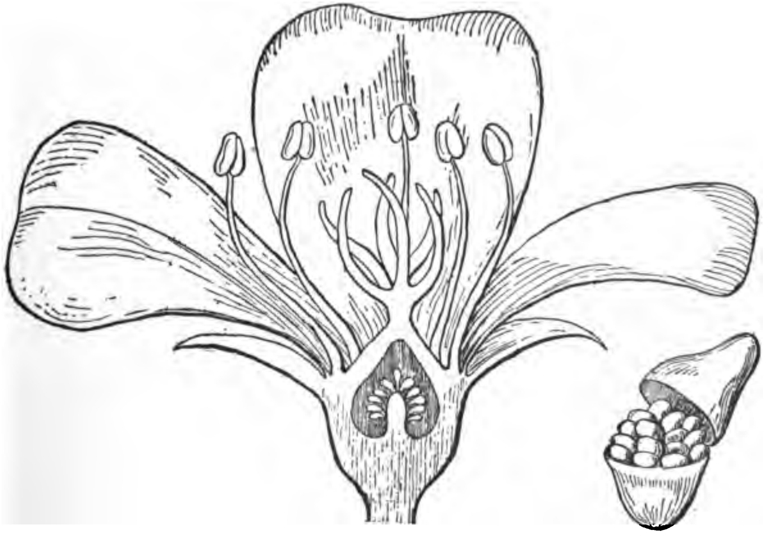
THE AUTHOR.

Boston, Massachusetts, 1913.

BOTANICAL FACTS

BOTANICAL FACTS

Every species must reproduce its kind, else the species ceases to exist. This is true of plant, animal, and man; and the principle of reproduction is the same for all—a mother producing the seed (or egg) and the father fertilizing the seed (or egg).

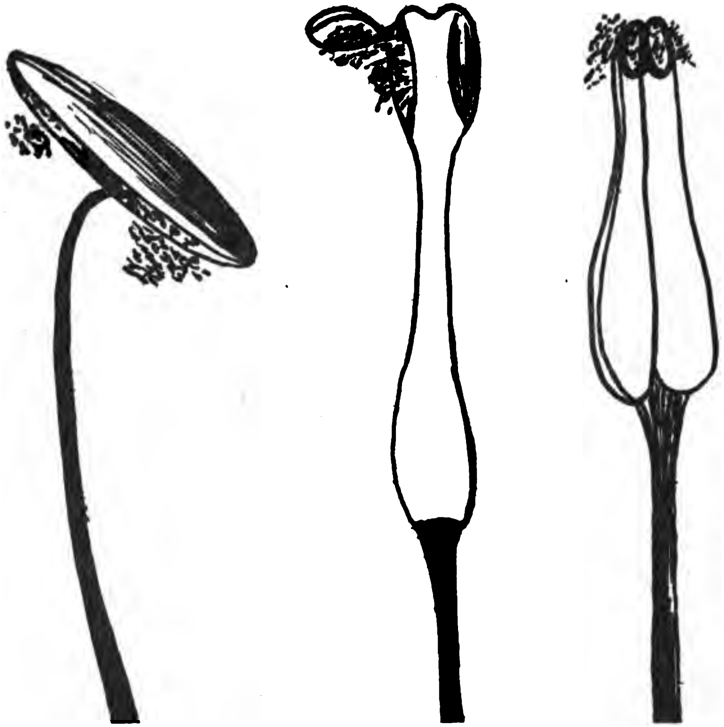


Section of a flower, showing stamens around the central pistil and seed cradle below. Also the seed cradle as it looks in the autumn after the corolla has dropped off and the blossom has gone to seed.

In plant life the pistil is the mother; at the foot of the pistil is found the seed cradle containing the seeds. The stamens are the fathers; the stamens produce a yellow paste—sometimes, however, light of weight and dry—

with which the seeds must be fertilized, else the seeds may not mature and may not reproduce.

The pistil and the stamens with their pollen are the essential parts of the blossom; but since it is necessary to attract bees, flies, butterflies, who shall bring and take away pollen (cross fertilization), the blossom has evolved color, odor, and nectar. Some blossoms have none of these, and such plants depend upon the wind to scatter or the water to float their pollen rather than upon insects (anemone).



Different shaped stamens, showing the ripened and falling pollen

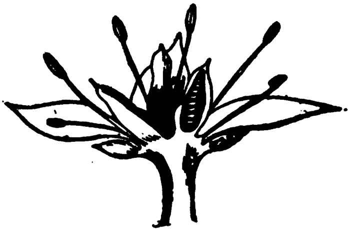
The parts of a flower are:

Corolla—Sometimes whole, as in the morning glory, sometimes divided into *petals*.

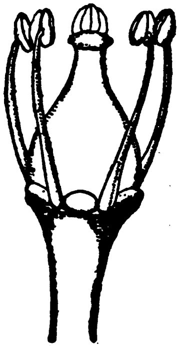
The *Calyx*—Sometimes whole, sometimes divided into *sepals*.

The *Stamens*—The tall parts, *filaments;* the tips, *anthers;* and the yellow dust, *pollen*.

The *Pistil*—The tall part, the *style;* the tip, *stigma;* the chamber at the foot, the *seed cradle*. With a microscope one sees that the stigma has perforations; through these perforations the pollen passes down to the seeds in the cradle below. In botany the seeds are called *ovules;* the cradle an ovary; but for children *seed baby*, *seed cradle* are more acceptable.



A blossom with a three-parted pistil, with seeds in one of the three chambers.



A gone-to-seed blossom, showing four stamens, a pistil with large seed cradle inclosed, and honey glands (nectar glands) around the base of the pistil.

THE STORY OF FERTILIZATION

Until 1682 botanists knew little of blossoms as we know them to-day. At last one botanist began to surmise that in some mysterious manner the pollen had something to do with the seeds, something to do with the development of the fruit. He stated his views, but another botanist declared that pollen had nothing to do with blossom or fruit; that, indeed, it was but a waste product which the blossom tried to throw off; that the fact that it lay so loosely upon the stamens and was so easily brushed off was one good reason for believing that it had no mission in the perpetuation of the plant. A third botanist was equally certain that the pollen had *some* use, but only as a damp substance which, mixing with the nectar, helped to keep the seeds moist. Yet another botanist declared that this could not be; for—so he said—nectar itself was bad for the blossom and the seed, interfering with the development of the blossoms. As proof of this the botanist cited the fact that in a field where the bees visit freely and openly, carrying off nectar and pollen, the blossoms were much larger and more brilliant than those in a field unvisited by bees. Indeed, this botanist experimented upon plants; he covered a group of a certain kind with a fine cloth, allowing other plants of the same species to grow, freely and uncovered, by the side. To those covered over the bees could not come; to those uncovered the bees came freely; in the end those that were covered died out and left weak seeds, or no seeds at all. Those that had been left uncovered developed fine, large blossoms, and later fine, strong, and numerous seeds. This experiment seemed to prove the theory that those flowers from which the bees took away the nectar and pollen flourished; therefore nectar and pollen must be bad for plant, blossoms, and seeds.

A whole century passed; still the secret of the blossoms and the bees was undiscovered. Then, in 1787, came

Sprengel, a German botanist, who very nearly discovered the whole secret. He watched the blossoms and their bee guests; he too experimented; he compared the results of his study; and after many summers of patient investigation he declared pollen not a waste product; that nectar is not bad for the blossoms and seeds, but that both have something to do with the development of the seeds. Indeed, Sprengel declared pollen to be absolutely necessary to the seeds—that by the pollen seeds are fertilized, and that bees are a great help in bringing about fertilization. This, then, explains, said Sprengel, why bees visit the blossoms, and why bee-visited blossoms are larger and more beautiful and the seeds stronger and more numerous. Color and fragrance and nectar, Sprengel also declared, exist in order to attract the bees.

Sprengel was right as far as he went; but Sprengel did not learn the whole secret; he saw only that a bee, entering a blossom, would in all probability brush the pollen from off the anthers, and then, as he moved about inside the flower cup, dust this pollen upon the pistils, thus fertilizing the seeds. Sprengel himself felt that there were deeper secrets yet to be discovered, but he did not live to finish his work.

Nearly another century passed; then came Charles Darwin, the great botanist of the nineteenth century. He studied Sprengel's statements, saw wherein they were true, wherein they were insufficient. For example, Sprengel's theory did not explain the bees' visits to blossoms in which the pollen falls before the pistils are ripe, that is mature and ready to receive the pollen; for stamens and pistils, like all living creatures, have a period of maturity before which no reproduction can take place.

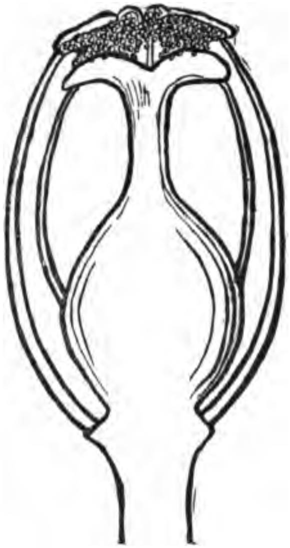


ILLUSTRATION 1

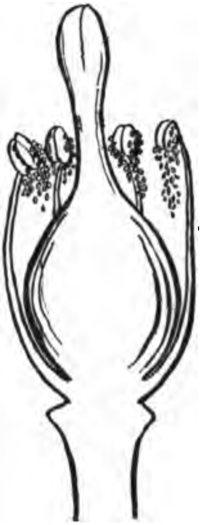


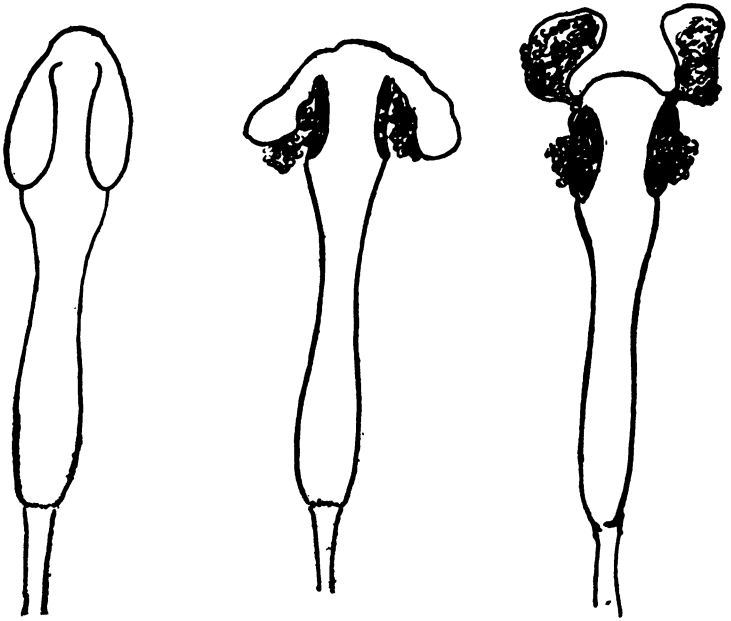
ILLUSTRATION 2

Illustration 1 is a blossom in which the pollen and the stigma mature at the same time. Such a blossom would be fertilized by its own pollen.

Illustration 2 is a blossom in which the pollen has ripened and is falling while the stigma is yet immature. This blossom could not be fertilized with its own pollen. This blossom would have to depend upon the bee to bring pollen at a later time when the pistil shall have ripened.

Sprengel's discoveries served, however, as the basis for Darwin's study; and Darwin was always ready to grant due honor to Sprengel, who came so near discovering the whole truth, which is *that bees visit blossoms to get the nectar; that the pollen is brushed off as the bees move about inside the flower cups; but that the bees often carry this pollen to other flowers, thus bringing about cross fertilization.*

Darwin experimented summer after summer; he planted the same kind of seeds in the same kind of soil; gave them the same care and attention. Those that he



Anthers at Different Stages of Development

allowed to cross fertilize invariably bore larger and more beautiful blossoms; then, in turn, the larger and more beautiful blossoms attracted the most bees. Thus, continuing generation after generation, utilizing only finest seeds of the blossoms in his experiments, Darwin produced a stock finer than any that had preceded, and to this process Darwin applied the term

NATURAL SELECTION

Natural selection Darwin declared to be the secret of progress in reproduction, whether it be a flower or living species; and since the offspring of natural selection is stronger and more enduring, Darwin evolved another law—

THE SURVIVAL OF THE FIT

That is, the strong rather than the weak will survive in any given competition. For a long time these views of Darwin were considered doubtful and dangerous. They are universally accepted now; and in recent years we are learning to apply the doctrine of natural selection and survival of the fit to the human race as well as to plants and animals.

In these terms of Darwin the mother and teacher have a powerful argument to use with the child; for the laws have mental and moral interpretation as well as physical. To survive in any competition one must be fit for that particular competition. This is the philosophy of the strong man, and gives no quarter to the idler or the whiner. "He that endureth to the end, him will I give a crown of life," is but a beautiful and tender manner of expressing the Darwin law—of survival of the fit—for him who has made himself fit in any given competition.

The mother must familiarize herself with certain fundamental facts pertaining to the process.

That the blossoms in their own way have an understanding of the need to make themselves strong and fit to survive is evident from the effort they make to secure cross-fertilization for their seeds; for in plant life, as in human life, continuous inbreeding produces weaklings. The mother, then, should familiarize herself with the following facts in regard to fertilization of seeds, and call the child's attention to blossoms which illustrate devices for securing cross-fertilization.

1. All blossoms were originally self-fertilizing.
2. Many blossoms are still self-fertilizing. (Gentian.)
3. Some blossoms have learned devices for cross-fertilizing, but also retain the original self-fertilizing device: the violet is an example.

Closed Gentian—Self-fertilizing, because it does not open its flower-cups.

Violets, showing the higher blossoms open to the insects and the lower closed blossoms still retaining method of self-fertilization.

4. Some blossoms have wholly lost their power of self-fertilizing: the willow, for example.

A Staminate Willow Branch

Self-Fertilizing Devices are:

a. Anthers lie close together and cover the stigma (potato).

b. Anthers pack together above the pistil head in a cone shape (mallow).

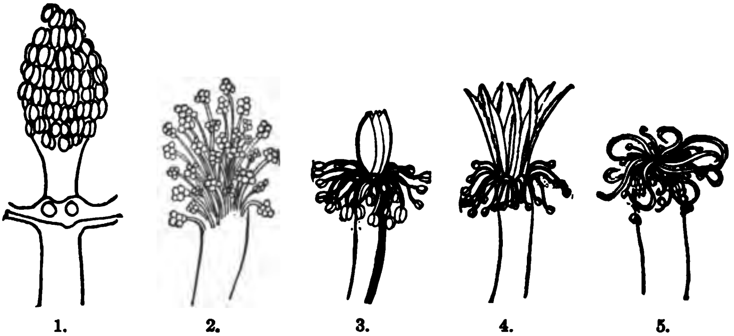
c. The whole flower stalk droops so that when the pollen is ripe it may fall upon the stigma (dewberry).

d. The stigma turns toward the anthers when the pollen is ripe.

e. Short pistil lengthens to the level of the stamens when the pollen is ripe.

f. Short stamens lengthen to the level of the pistil when the pollen is ripe.

g. Tall pistil shortens, crouches, or curls to reach the level of the short stamens (mallow).

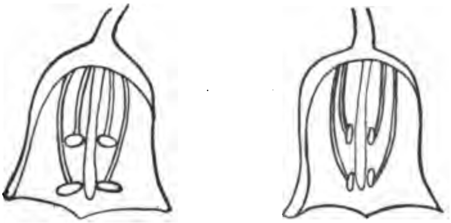


Stages of development in this blossom. No. 4 illustrates tall pistils before they are ripe. No. 5 the ripe pistils bending to reach the pollen of the anthers.

h. Tall stamens shorten, crouch, or curl to reach the level of the short pistil.

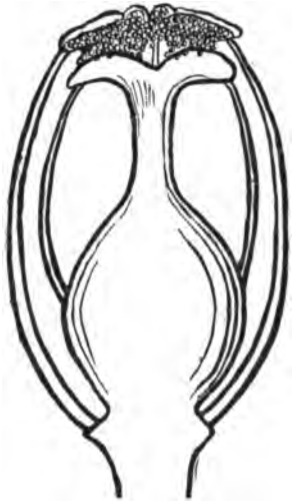
i. Stigma droops and turns toward the stamens when the pollen is ripe.

j. Stamens droop and turn toward the pistil when the pollen is ripe.



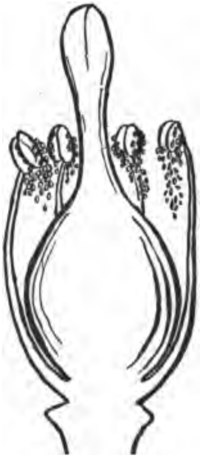
Ripe stamens turned toward the pistil

k. **Pistil and stamen mature at same time.**



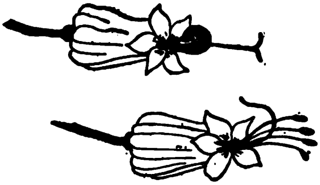
Cross-Fertilizing Devices:

a. Pollen ripens before the pistil is ready for the pollen



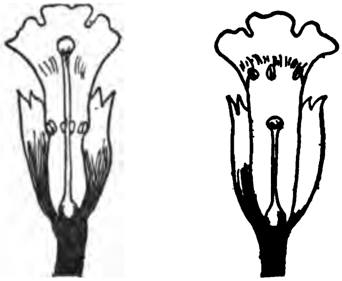
Pollen ripened before the pistil matures

b. Pistil ripens before the pollen is ripe.



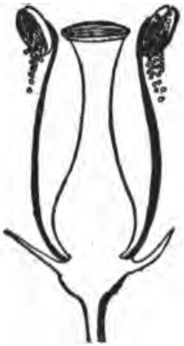
Pistil ripened before anther matures

c. Pistils and stamens remain at different levels.



At different levels

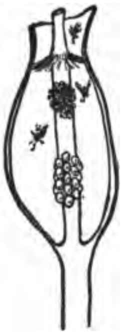
d. Anthers turn away from the stigma when the pollen is ripe.



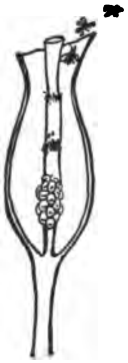
Ripe anthers turned away

e. The stigma turns away from the anthers when the pollen is ripe.

f. Some blossoms imprison insects and keep them until the pollen is ripe, then set them free (jack-in-the-pulpit).



Flies imprisoned by stiff hairs



Hairs fallen off with ripened pollen

g. Some anthers grasp the body of the bee with the stamens as he enters the blossom (barberry).

h. Some anthers make very sticky pollen (milkweed).

i. Very furry anthers covered with pollen.

NOTES

Orchids have an endless variety of devices for effecting cross-fertilization (lady's-slipper).

Every shape, color, line, hair, perfume, nectar exists in the blossom for a reason, and that reason is primarily fertilization.

Sweet-smelling blossoms invite bees; ill-smelling blossoms invite flies (rose, jack-in-the-pulpit).

Wind-pollinated blossoms have neither color, odor, nectar (anemone).

Water flowers have pollen of the right specific gravity to insure the floating of pollen on exactly the same level as the stigma of the flower.

Blossoms that open only at night invite only moths (evening primrose).

Certain blossoms are adapted only to certain bees; therefore only these bees visit those blossoms.

Some bees gather only pollen; some only nectar; therefore bees visit most often blossoms which most contain that which they wish to gather.

Long-throated blossoms invite long-tongued bees, long-tongued moths, or humming birds. Humming birds are seen hovering over long-throated blossoms, the trumpet flower, for example.

The adaptation of insect to blossom and blossom to insect is perfect.

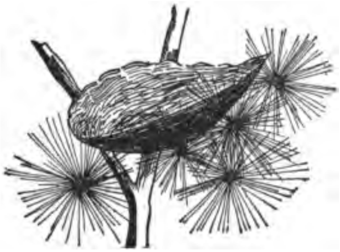
Children should be encouraged to imprison bees for a time and watch their ways of eating, of sleeping, and of combing themselves. They should be encouraged to watch the development of butterflies and moth cocoons. Under intelligent guidance the world is one vast playground for children, and every hour of play with its tiny creatures makes for future personal development.

No less interesting are the methods employed by the blossoms to secure flight for their baby seeds, for it is quite as necessary that seeds should find new soil as that they should be cross-fertilized. In the autumn seeds are most in evidence—in the form of nuts, berries, and seeds with plumes, hooks, or spines; some with sticky juices.

Some blossoms teach their seed babies to tumble and roll with the wind; some teach them to float on the water; some teach them to shoot themselves off into the air; some surround their seeds with pulp which birds like to eat, thus dispersing the seed; some seed babies are so light of weight that they float away, borne through the air without plumes or wings.

ILLUSTRATIONS

Seeds that fly with plumes:



Dandelions
Cotton
Geraniums
Cat-Tails
Willows
Thistles
Milkweed
Asters
Goldenrod
Clematis
Lettuce
Many grasses

Seeds that fly with wings:

Maple tree seeds
Elm tree seeds
Ash tree seeds
Pine tree seeds

Seeds that travel by clinging or sticking:

Mistletoe
Flax
Tick Trefoil
Beggar-ticks
Cockleburs
Sticktights
Agrimony

Seeds that float:

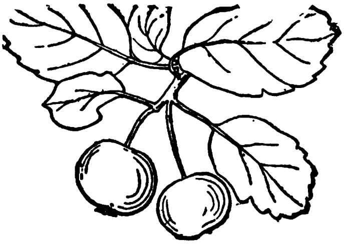
Coconut tree seeds
Many water-plant seeds
Many sedge seeds

Seeds that shoot:

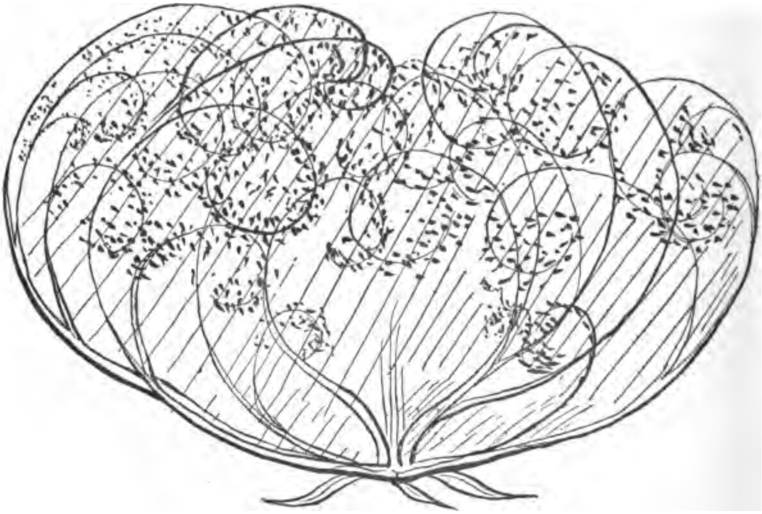
Oxalis
Balsam
Witch-hazel
Touch-me-not
Squirting cucumber

Seeds "good to eat":

Nuts
Cherries
Apples
Pears
Peaches
Wintergreen berries
Partridge berry



Many plants open their seed pods, releasing the seeds, not until far into the winter. These seeds are often found coasting across ice and snow, driven, of course, by the wind. This is particularly true of many sedges; often masses of sedge seeds are found on the far side of a pond, across which the winds have blown, driving the seeds before them. The tumbleweed, which is seen rolling over and over down the country road before the autumn wind, is an illustration of seeds released late.



Tumbleweed

Many light-weight seeds float on still waters; these may wash up on the opposite shore or they may be taken up and carried by birds—ducks—which, going down into the water, carry the seeds away on their plumage.

It is a wonderful thing that seeds which germinate *beneath* the water have pollen just of the right specific gravity to float at the level at which it was formed, thus floating directly to other blossoms of the same kind at the same level beneath the waters. On the other hand, pollen of blossoms which lie *on* the water is of just the right specific gravity to float *on* the water, thus traveling directly to other blossoms lying *on* the water; thus do we find that every child of nature is perfectly adapted to its needs and necessities. The study of some simple book on bees, moths, or butterflies will reveal the marvelous adaptation of each to certain blossoms; and observation will soon reveal that these insects visit only those blossoms to whose depth and shape they are adapted.

The mother can hardly estimate the opportunity which blossom study gives her for bringing about true companionship with her child. The mother need not know a great deal about blossoms—only a few terms are essential; and together mother and child can search for the secret which every blossom is ready to tell to him who cares to know.

One word of warning: if possible, make this an out-of-door study; that is, use real blossoms, not textbooks. Not even a pictured blossom—although pictures are useful aids—should be made the basis of blossom study.

FIELD HELPS

A.—Examples of self-fertilizing blossoms are:

Wood Anemone.
Whitlow Grass.
Shepherd's-purse.
Common St. John's-wort.
Marsh St. John's-wort.
Common Mallow.
Yellow Wood Sorrel.
Cow Vetch.
Steeple Bush, or Hard Hack.
Wild Red Raspberry.
Common Agrimony.
June Berry.
Common Prickly Pear.
Asters.
Daisy Fleabane.
Large Bur Marigold.
Tall Sunflower.
Oxeye.
Black-Eyed Susan.
Common Dandelion.
Sow Thistle.
Common Pimpernel.
Dogtooth Violet.
Wild Columbine.
Field Larkspur.
Tall Wild Larkspur.
Whitehearts.
Corn Cockle.
Wild or Pink Catchfly.
Bouncing Bet, or Soapwort.
Spring Beauty.
Mallow.
Wild or Spotted Geranium Cranesbill.
Red Robin.
Grass of Parnassus.
Early Saxifrage.
Orpine, or Live-forever.
Great Willow Herb- or Fireweed.
Evening Primrose.
Cow Parsnips.
Button Bush.
Wild Teazle.
Purple Thoroughwort, or Joe-pye Weed.
Great Blue Lobelia.
Common Harebell.
Culver's-root.
Brooklime, or Water Speedwell.
Snakehead, or Balmony.
Hairy Beard Tongue.
Spear Mint.
Wild Bergamot.
False Dragon's Head.
Self-heal, or Healall.
Skullcap.
Viper's-bugloss.
Virginia Waterleaf.
Sweet William.
Downy Phlox.

B.—Examples of blossoms with anthers maturing before the stigma matures:

Ground or Moss Pink.
Rosy Centaury.
Fringed Gentian.
Closed Gentian.
Nodding Trillium.
Great Flowered White Trillium.
Am. White Hellebore.
Spotted Touch-me-not, or Jewel Weed.

C.—Examples of blossoms with stigma maturing before the anthers mature:

Laurel, or Small Magnolia.
Yellow Nelumbo.
Large Yellow Pond or Water Lily.
Blood Root.
Purple or Water Avens.
White Avens.
High Blackberry.
Common Hawthorn.
Black Snakeroot.
Starflower, or American Chickweed.
Figwort.
Horse Balm.
Morning-glory.
Ground Cherry.
Wild Ginger.
Skunk or Swamp Cabbage.
Wild Spikenard, or False Solomon's-seal.

D.—Examples of separate staminate and pistillate blossoms:

Virgin's-bower, or Virginia Clematis.
Liver Leaf, or Hepatica.
Sharp-lobed Hepatica.
Staghorn Sumac.
Climbing Bittersweet.
Virginia Strawberry.
Star Cucumber.
Pearly Everlasting, or Immortelle.
Groundsel bush or tree.
Mountain Holly.
Black Alder.
Creeping Thyme.
Spice Bush.
Flowering Spurge.
Jack-in-the-Pulpit, or Indian Turnip.
Water Arum.
Broad-leaved Arrowhead.
Blazing Star, or Devil's-bit.

E.—Examples of blossoms with stigma protruding beyond reach of the blossom's own anthers:

Common Sundrop.
Twin Flower.
Great Blue Lobelia.
Andromeda.
Common or Black Huckleberry.
Purple Azalea, or Pinxterflower.
Wintergreen.
Shooting Star, or American Cowslip.
Spotted Pipsissewa.
Sweet Wild Honeysuckle.
Bush Honeysuckle.
Common Mullein.
Large Purple Geradia.
Downy Foxglove.
Field Bindweed.
Ground Cherry.
Bellwort.
Spiderwort.

F.—Examples of blossoms with anthers when ripe turning away from the pistils:

Larger Blue Flag.
Marsh Marigold, or Am. Cowslip.
Field or Corn Mustard.
Ladies'-smock, or Cuckoo Flower.
Small-flowering Senna.
High Blackberry.
Common Elder.
Rosy Centaury.
Fringed Gentian.
Closed or Blind Gentian.
Skunk or Swamp Cabbage.
Yellow Star Grass.
Long-branched Frost Weed, or Frost Flower.

G.—Examples of blossoms having peculiar devices for securing cross-fertilization. (See Barberry illustration, page 81.)

Common Field or Purple Milkwort.
Button Bush.
Mountain Laurel.
Large Bladderwort.
Butter and Eggs, or Common Toadflax.
Wild Trumpet Flower.
Monkey Flower.
True Forget-me-not.
Spreading Dogbane.
Larger Blue Flag.
Barberry.

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SPRING AND SUMMER STORIES

IN THE BEGINNING

In the beginning was the All-Father; and the All-Father created many worlds upon which his children might live. And as the All-Father looked upon these children and thought of the great joy that some time would be theirs, his loving heart longed to create other worlds upon which other children might live.

And so it came about that the earth—our world—was created. And when the sun had smiled upon it, and the rains had fallen upon it, and the winds had swept over it, lo! little Blossom Babies came dancing forth into the sunlight. Trees and grasses and mosses sprang up and the earth was covered with beauty.

How the earth rejoiced, and how happy the blossoms were! The winds whispered kind thoughts, and the great sun shone, warm and loving, upon them.

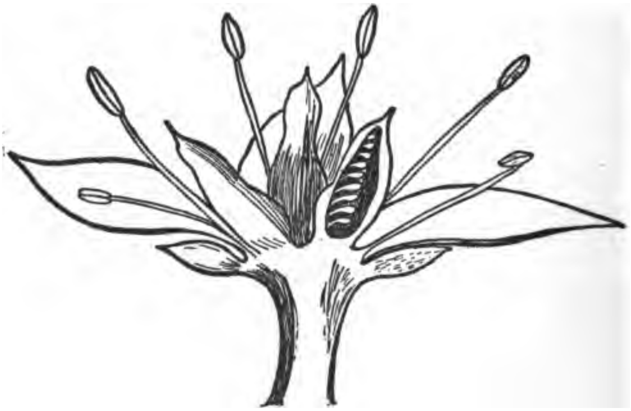
Pistil and Stamen

For a long, long time the Blossom Babies danced in the sunlight and warmth, and had no thought nor care; but one day a change began to creep over the earth; the sun did not smile so warmly; even the winds were not quite so gentle.

"Dear me," shivered one little Blossom, "are we going to sleep?"

"Not yet, not yet!" called the cheery voice of Mother Nature. "Not yet, not yet! For if you go to sleep the earth will be sad; and what, pray, shall I do without you to make beauty everywhere? Listen, little Blossoms. I have a secret to whisper into your hearts."

Then Mother Nature bent low over the tiny blossoms, and this is what she said: "Little Blossoms, you are the All-Father's children; he loves you every one, for his love and his life pour down upon you and through you; if this were not so there would be no blossoms, no trees, no grasses, no mosses. But, little Blossoms, you have not yet finished your work. Were you to go now to sleep, when again the warm summer comes, there would be no blossoms, no trees, no grasses, no mosses. So



A Sun Cradle

listen, Blossoms, to the message which the All-Father sends by me to you."

"We listen," nodded the little Blossoms.

"But tell me first, little Pistils, have you prepared your seed cradles?"

"O, yes, Mother Nature!" cried the Pistils. "See what fine cradles we have prepared; and see, there are many little baby seeds inside!"

"I haven't so many seed babies, but they are round and fat and very strong, I think," said the Pea Vine.

"And here are mine!" cried a little Bell Flower, almost shaking her petals off in her happiness.

"And here are mine!"

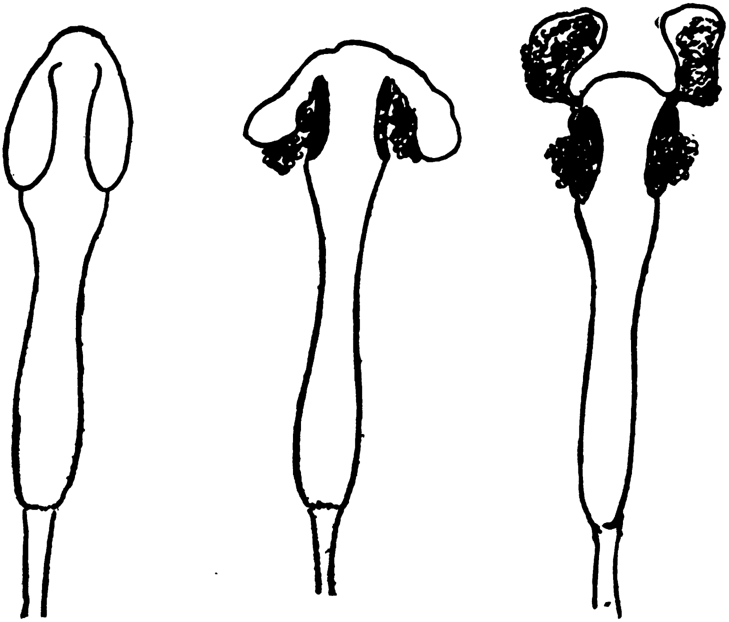
"And mine!"

"And mine!"

"Yes, yes, children," said Mother Nature; "I will peep into every seed cradle; and then I will tell you a sweet secret"; but first Mother Nature seemed quite more interested in the stamens than in the seed babies. At each stamen she looked sharply; and sometimes she shook her head sadly, and sometimes she laughed happily to herself.

"Why don't you look at our seed babies?" asked one proud and haughty Pistil mother.

"Your seed babies?" asked Mother Nature. "Ah, proud little Pistil Mothers, the greatest happiness comes only to those who share; so listen, little Mothers. The Maker of All Things wishes you to be more happy; he wishes you to learn the sweet lesson of sharing; and so, little Pistil Mothers and little Father Stamens, you must share your happiness with one another. You have prepared the seed cradles, little Pistil Mothers, and the little seed babies are sleeping in them. Now, Father Stamens, there is a part in this happiness for you. See, little Stamen Fathers, how generously you are supplied with pollen? Can you not guess what the pollen is for? No? Well, let me whisper to you; listen, little Pistil Mothers and Stamen Fathers! Into the pollen the Maker of All Things has breathed the breath of life; without the pollen into which He has given His own life no seed can live and develop into a plant."



An Anther at different stages of maturity

"We do not understand," the Stamens began.

"No one in all the earth understands, little Father Stamens," said Mother Nature, softly; "but the All-

Father understands. Do as the All-Father bids you, little Stamens, and share with Mother Pistils the joy of caring for your seed babies. Lift your heads, little Pistil Mothers, one and all, and receive the ripe pollen. Take all you can, and send it down to the seed babies. Then you may, indeed, go to sleep knowing that when another summer comes the earth will be beautiful with the blossoms that spring from the branches of your seed babies' plants."

Just then a breeze sprang up; it was soft and gentle, and sweet fragrance filled the air. The Pistil Mothers and Stamen Fathers smiled into each other's faces; and the pollen floated about in the flower cups. Sometimes the Pistil Mothers leaned down to receive the pollen; sometimes the Stamen Fathers reached up to the Pistil Mothers; sometimes the entire blossom drooped so that the Father Stamens might shower their pollen upon the Pistil Mothers. Some of the Stamen Fathers, so happy were they to share the seed babies with the Pistil Mothers, twined lovingly around the Pistils, pressing their dusty heads close against them, as if to say, "We are much happier, little Pistil Mothers, now that we share with you in giving life to the seed babies."

And the Pistils, bending their heads toward the Stamen Fathers, whispered, "And we are happier too, little Stamen Fathers."

"Blessed little Pistils, blessed little Stamens!" said Mother Nature to herself; "they have learned the great lesson of life—that there is no happiness in selfness, but whole summertimes of happiness for those who love and share and work together."

STILL A BETTER WAY

So the summer passed; and the Stamen Fathers learned better and better how to send pollen to the Mother Pistils, who, for their part, learned better to send it down to the baby seeds. As we know, some Stamen Fathers learned to arrange themselves in a conelike shape above the Pistil so that their pollen could not fail to reach the tiny seed babies; others kept their faces turned always toward the Pistil Mothers, so that none of their pollen should fall outside the flower cup; and many a Pistil Mother, although she loved to stretch herself up and look out over the flower cup, learned to bend lovingly over the Stamen Fathers when they whispered that their pollen was ripe.

For many, many summers all was well; but as the summers passed, and each blossom lived to itself alone, it came about that the blossoms began to grow small and weak.

"We have tried so hard," said the Pistil Mothers, "to send pollen down to our seed babies."

"And we," said the Stamen Fathers, "have prepared pollen all summer long, that there might be no lack."

"Share, share, share!" whistled the wind as he went rushing across the fields.

"Sh-sh-are! Sh-sh-are!" buzzed the bee as he flitted by.

"What do they mean?" asked the Stamen Fathers.

"Whom should we share with?" said the Pistil Mothers. "Have we not shared in the joy of preparing our seed babies?"

Still the wind and the bees whispered, "Sh-sh-are! Sh-sh-are!"

"We must ask Mother Nature," said the Stamen Fathers.

"Perhaps the All-Father has another message for us," said the Pistil Mothers.

"Yes, little mothers," said Mother Nature, "the All-Father has indeed another message for you. He has watched you and knows how faithfully you have worked together, and how faithfully you have cared for your seed babies; but now I will teach you a way to bestow greater strength and beauty upon your seed babies."

Then every little Pistil and every little Stamen turned its face toward the heavens, from whence blossom messages always come. And this is what they heard: "You have been very happy, little Stamens and little Pistils, living and loving each group in your own flower cup; but it is not best to live for yourselves alone. Give, give, little Stamens! Give, give, little Pistils! Look out from your own cup across the fields and learn to love every blossom of your large family. Send your pollen, little Stamens, to other blossoms; and you, little Pistils, take pollen as it shall come to you from other blossoms. So shall you grow large and generous of heart and loving toward all."

Then the Pistils and the Stamens stretched up their little heads and looked out across the fields. Everywhere they saw blossoms just like themselves—sister blossoms. And, as Mother Nature had said, there arose in the hearts of the blossoms a larger, more generous understanding of what a larger love means.

The little flower cups nodded to each other, and eagerly awaited the coming of Mother Nature, that they might ask her to teach them ways to help each other.

"The bees and the winds will help you," said Mother Nature; "yes, and the birds and the waters."

"How can they help us?" the blossoms asked.

"Get your seed babies ready, Mother Pistils, in just the same way," said Mother Nature; "and, Father Stamens, get your pollen ready."

"We will help you when your pollen is ripe!" buzzed the bees.

"And we will help you when your pollen is ripe!' whispered the winds.

"We, too, will help when your pollen is ripe!" sang the birds from the treetops.

"And those of you that dwell upon our bosom, we will help when your pollen is ripe," said the still waters.

"Do you notice," said the Stamen Fathers to the Pistil Mothers, "that they all say *'when your pollen is ripe'?*"

"Yes," said the Pistil Mothers; "let us, then, get our seed babies and our pollen ready, as we always have; then we shall see what the wind and the bees and the birds and the waters mean."

So the Pistils and the Stamens set themselves to work; and so busy were they, and so happy working for their seed babies, that they almost forgot what the wind and the bees and the birds and the water had said.

But when the pollen was ripe wonderful things began to happen. First, bees came; often butterflies came; sometimes moths and wasps, and even little flies.

"O, be careful!" cried one little Stamen. "You are brushing away my pollen."

"Buzz-buzz!" said the bee; "that is what I came for. See, I shall carry it to some neighboring blossom."

"O, see what you are doing, Wind!" cried another little Stamen Father. "You are blowing away our pollen!"

"Just what I came for," whistled the wind; and away he flew, carrying so much pollen that the air was yellow with it.

By and by wasps and butterflies and moths and flies came. "We have visited many blossoms to-day," they said. "See how loaded we are with pollen! Your sister flowers asked us to bring it to you; they send it with their love to your seed babies."

So the summers passed; each year the little flowers learned new lessons, each year they learned better what to do. They learned to prepare sweeter nectar for the bees; they learned to paint beautiful colors upon their petals, that the bees might find them as they flew from field to field; they learned to attract by sweet fragrance also. Some of them learned to paint a nectar path[1] by which the bees should be guided to the nectar cups. Others, wishing to attract flies, and finding that flies like a disagreeable rather than a sweet odor, began to throw out an odor so like the food that flies like that they would rush by thousands straight into the flower cups.

One pert little fellow, Jack-in-the-Pulpit, learned to trap the flies, and keep them imprisoned until his pollen was ripe that they might carry it to other Jacks far away.

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[1] Especially beautiful nectar paths in the Iris.

Another blossom was so afraid that her beautiful beplumed seed babies might be overlooked by the bees that she made a pollen so sticky[1] that no bee or other insect could leave her dainty chambers without carrying away loads of it. Often a bee would have to rest upon the leaves or branches of the plant and bite away the sticky stuff from his wings and legs before he could fly or even crawl back to his home.

"Wise little blossoms!" said Mother Nature as she watched from summer to summer the devices which they invented to attract the bees and the insects and the birds. And Mother Nature rejoiced, for year by year the blossoms grew more beautiful, the plants more hardy; the trees grew taller and sturdier, and so thick and green were the grasses that the earth was covered with a velvet carpet.

NOTE.—Based upon the botanical fact that persistent in-breeding is not best for development; that through cross-fertilization best blossoms, seed, and fruit are secured. Ethically interpreted for the child, the more broad and universal the quality of love—the more highly developed the type.

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[1] Milkweed.

WHY THE FLOWERS LEARNED TO GROUP

"MOTHER NATURE told us," said an anxious Chicory Pistil, "of a good way to secure pollen for our babies."

"What do you mean?" asked the Stamens; "and why isn't our way well enough?"

"Fathers very, very seldom understand seed babies," said the Mother Pistil, loftily.

"We ripen the pollen, do we not?" said the Stamens, looking aggrieved.

"Certainly; but only we mothers who watch over the babies night and day really understand," replied the Pistil.

The Stamens said no more. "Pistils are strange things," they whispered to each other.

"I shall ask Mother Nature," said the Pistil to herself, "to tell me what to do."

"And I shall gladly tell you," said Mother Nature. "What is it, faithful little Mother Pistil, that you wish?"

"I have been thinking and thinking of what you told us," said the Pistil; "that it is better for seed babies if they receive pollen from other anthers than those of their own blossoms. Did you really mean that seed babies receiving pollen from other flowers are stronger and larger? Is it true, Mother Nature?"

"It is quite true, little Pistil. It is my wish that all my pistil children shall learn the great good that comes from friendliness with other blossoms; but many are not ready to learn. You are, tiny Chicory Mother, and I will tell you. It is a law of nature that it is better to mix the saps of different plants than to allow one plant to continue generation after generation to grow its own blossoms and fertilize its own stigmas from its own anthers."

"But I am so very tiny, and I have a tiny outlook. There must be other chicory plants, but I know only this one which nourishes me."

"Very well," said Mother Nature; "don't try to get pollen from another plant; begin by getting it from another blossom on your own plant."

So then Mother Nature bade the chicory blossoms every one listen to what she had to say. She told them that all fathers and mothers should think first of what is best for their babies, for their kind, for the world. And since Nature had declared that fertilization from another flower, or, better still, from another plant, is best for the babies, they should, both stamens and pistils, learn to send pollen to pistils outside their own flower cups and to receive pollen from anthers outside their own flower cups.

"Begin first," Mother Nature went on, "by sending pollen to the flower nearest your own. When you have learned that lesson well I shall lead you upward another step."

"What shall we do first?" asked the Chicory.

"Why not begin to live in close groups?" said Mother Nature.

Year after year passed, century after century, ages after ages, for all changes in Nature come very, very, very slowly. The chicory was improving each year; the blossoms grew closer together; they snuggled together like the loving little florets that they were; they began to develop petals; by and by the outer row of stamens began to raise the banners which some people with eyes, but who see not, call to this day petals.

"Bravo!" Mother Nature would say to them now and then; and the patient little Chicory worked on and on.

Meantime other blossoms were learning the same lesson, until at last the fields were covered far and near with flowers that group; and so closely have such blossoms as the chicory, the daisy, and the dandelion cuddled together that people who have eyes but see not still think when they pick a colony of daisies, with their white flying banners, that they have picked *a* daisy, and when they blow at the seed plumes of a dandelion colony that they have blown away *a* dandelion.

"I heard one of those tall creatures that walk and talk aloud tell a little creature that walks and talks aloud," began the Caraway, who had also learned to group, "that we—"

"That tall creature was a stamen!" interrupted the Parsley, who stood near by; "and the little one was a seed baby."

"How do you know?" asked the Caraway, beside herself with excitement.

"I heard the tall creature explain to the little one that, after all, Mother Nature's plan for continuance of species was the same, whether the species be plant or bird or animal."

"The tall one said to the little one, 'Look at these Caraway people; they live close together; they have one nursery, one heating plant, one water source; and they call their group an *umbel* or a *head* or a *spike* or a *raceme* or a *corymb.*' What do you suppose he meant?"

"Don't ask me," said the Parsley. "I hear those creatures say many things that sound to me very strange."

"Well, the tall one told the little one that we Caraways grew in umbels. And the little one said he liked an umbel grouping better than any other.'

"The silly thing!" said the Parsley; "but don't let us mind a word those creatures say. They know very little as yet about blossoms."

Just then a breeze came dancing along; and it gave both Parsley and the Caraway such a shaking that they did not get themselves into order until sundown; and in the morning they had forgotten all about the tall creature and the little one who walked and talked aloud.

NOTE.—Only closely packed blossoms like those of the dandelion or chicory are called *composite.*

HOW SOME PLANTS PROTECT THEIR SEED BABIES

"O WHAT fine-looking blossoms!" said a fine, fat worm as she looked up at the bright-colored blossoms above her. "I shall climb up the stalks and eat their nectar."

"Did you hear that?" whispered the Blossoms, nodding their heads wildly. "Eat our nectar? No, no; our nectar is for the bees. These worms would not help us to send pollen to another blossom."

"Ah," said the worm, still crawling slowly but surely toward the plants, "blossoms like these must have fine nectar. I am sure too that the petals would taste good. Perhaps too there are tender little seed babies that I could eat."

The blossoms fluttered as if a great wind had swept over the garden. "What shall we do?" they whispered to each other.

Some of them nearly fluttered themselves to the ground; and upon the stalks, so terrified was the entire plant, the hair stood straight up on the stems. On other stems juices oozed out, so tightly did the stems tighten their little cells.

Slowly the worm crawled on. She reached the foot of the plant; then she raised her feelers and grasped the stalk; then she drew up her body in an odd way that worms have; then she stretched herself, and planted more feet upon the stalk.

This was all very well, and the worm was pleased with herself; but, alas! when she made ready to advance further she found that her fore feet were stuck fast in the sticky ooze that the stems had thrown out. And there the little worm would have been to this day had not a bird flown down and carried him away to her birdlings in the treetop.

"That was a very narrow escape, little seed babies," said the Blossoms. "Thank you, Stems, for rescuing us."

"You are quite welcome," said the Stems; "and henceforth we will keep ourselves oily and sticky; other worms are likely to come at any time."

Meantime a little ant had scurried across the garden bent upon climbing the stalk of another plant. Now, this plant had no sticky oil, but its hairs had so stiffened with fear that they were still standing. On, on came the little ant, his sharp tools ready to cut into the tender plant.

"O, those ants!" sighed the plant with no sticky oil. "How they bother me! And I have no sticky oil to catch them with."

"Wait," whispered Mother Nature; "wait and see."

Now the little ant was at the foot of the stalk. He stopped a second to wriggle his little feelers, then up he started. Alas! he could not climb. Something troubled him; he wriggled and wriggled; he lifted his little feelers; he pushed up his little head. Ow! how the sharp hairs hurt him! "This stem is covered with needles," he said; and as fast as his little legs could carry him he ran back to his home to tell his brother and sister ants to keep away from plants that covered their stalks with sharp needles. "Why," said the little ant, "it was like meeting an army of red ants—so sharp were those barbs that the plant stalk carries."

"They could have been no more disagreeable than the sticky stuff which other plants carry," said the worm, who had dropped from the bird's bill and was resting at the doorway of the ant's home.

"Do you hear that, little seed babies?" whispered the Blossoms of the hairy plant. "Henceforth we are safe from ants, for henceforth the hairs of our plant shall stand always erect and stiff ready to pierce any tiny creature that tries to climb our stalks."

"Do you hear that, little seed babies?" asked the Blossoms of the sticky-stalked plant. "Henceforth we are safe from ants and worms, for henceforth our sticky juices shall stand ready to glue down any tiny creature that tries to climb up to us."

Note.—Sticky juices and hairs are for the purpose of protection from enemies of the insect world. Are there any other protective devices?

WHAT THE TRILLIUM SAID TO HER STAMENS

"Good morning, dear Stamens," said the Trillium Pistil one soft spring morning.

"Ah, good morning, dear Pistil," answered the Stamens, turning their little brown faces toward her. "What a fine, straight pistil you are, to be sure!"

"Of course I am straight; why should I not be?"

"We have been watching a little flower over across the way; and we noticed that the pistil curves over. We thought perhaps all pistils were curved."

The Pistil stretched herself up as far as possible and looked out over her petals at the flower across the way. "O, I see what you mean," said she. "That is a three-lobed Hepatica, and I have heard that when the Hepatica pistil has her seeds all ready she leans over and whispers her secret to the stamens. That is what she is doing now. Watch, and you will see the stamens give up their pollen to her, for that is all she needs to complete her spring work. After that she will rest and sleep the long summer through."

"It seems strange that she should bend toward the stamens, doesn't it," said the Stamens.

"Why strange?"

"Because we Trillium stamens are taught to bend toward you," answered the Stamens.

"Yes, that is certainly the custom in our household," the Trillium Pistil said; "but I have heard that in some households the pistil bends toward the stamens when the seed babies are ready."

"Our way seems to us best," said the gallant little Trillium Stamens.

"Yes, it seems to me best," answered the Pistil. "I shall tell my seed babies to teach their stamens to do the same next spring. Ah, here you are! Now give me some pollen, please. There! now we are sure that the welfare of our babies is assured. I wish I could show them to you, dear Stamens, but, you see, I have to hide them away and roll them in tiny coverlets, and so can show them to no one."

"Thank you, but don't mind, dear Pistil. We know they must be beautiful babies, having so loving and careful a mother. But we begin to feel sleepy. I wonder how long before Mother Nature will let us float down to the soft, brown earth and sleep?"

"Not long to wait, not long to wait," whispered Mother Nature.

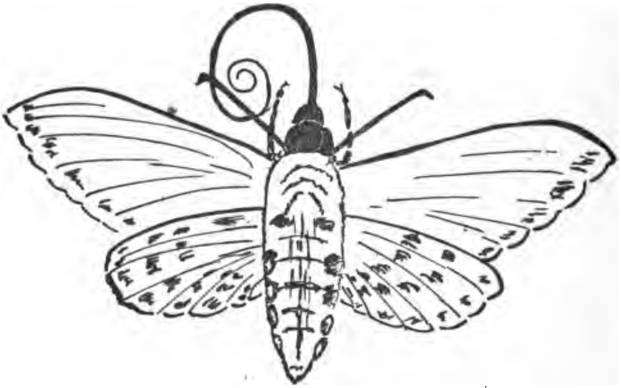
NOTE—A bright little spring blossom, with a whorl of three leaves just below it on the stem. Notice the short pistil and the stamens with long anthers turning inward. The blossoms, which come so early in the spring, favor self-fertilization, for accidents of sun and rain may prevent the coming of bees and other insects. Notice the odd little three-parted pistil.

FOUR-O'CLOCK STAMEN AND PISTIL

It was four o'clock in the afternoon; the sun was dipping low in the west; the birds were singing their good-night song; and the night moths were beginning to flutter out into the soft light.

"Ah, good evening," nodded the Four-o'Clock to the tall Phlox that stood by the garden gate.

The Phlox looked down into the Four-o'Clock blossoms and said, "We are glad to have you open, little neighbors, for you are more beautiful when you are open; but we don't think we have ever seen you before, although you stand in just the same place as some Four-o'Clocks with whom we had a nice, long talk a day or two ago."



"Why we are those same Four-o'Clocks. Don't you know us?"

"You have the same colors, true; but—"

"Why, don't you remember, you asked us why we kept closed until four o'clock every afternoon?"

"Yes, we remember; and we remember that you said it was because you opened your nectar cups only to night insects; but you—"

"O, yes; we are the same Four-o'Clocks."

"But listen—don't break in when others are trying to talk. Don't you know that is a rude thing to do? As we said before, your colors are the same, and you stand in the same place; but the insides of your blossoms look very different. Your stamens and pistils are all twisted together; while in those Four-o'Clocks that we talked with each stamen stood up straight and tall, each in its own place."

"O ho! ho! ho!" and the Four-o'Clock blossoms nearly tore their corolla in pieces, rocking back and forth with laughter.

"We see no occasion for such mirth," said the Phlox, holding their heads high.

Just then the sun dropped behind the hills; a shadow seemed to fall over the whole earth. A tiny fly, on his way home for the night, stopped to rest on the Four-o'Clock blossom.

"Why are you laughing?" asked the fly. "I don't see why anyone should care to laugh after the sun has gone down."

"People differ," said the Four-o'Clock. "We prefer the nighttime; it is cooler, and we have other reasons. However, we were laughing because our neighbor, the Phlox, thought the wind had tangled our stamens and pistils."

The fly turned around and looked down into the blossom. "Well, well, you are tangled," said he. "No wonder the Phlox thought the wind did it; but I suppose the stamens are clinging to the pistil for support, just as some vines I have seen cling to the trees and posts and trellises."

"O, what stupid people there are in the world!" cried the Stamens. "Clinging for support indeed! Don't you know we are twisting around the Pistil so that she can get our ripe pollen for her seed babies?"

The fly rubbed his hands together and fluttered his wings. "Good-by," said he, and away he flew. And when he reached his home he said to his family, "What do you suppose those Stamens meant?"

"I don't know," said Mother Fly. "I have often got flower pollen on my wings; but I don't know what a seed baby can do with it. What are seed babies, any way? I have never seen one flying."

"Perhaps they don't know how to fly."

"Or perhaps they fly after we go to sleep."

"I could explain it all to that stupid fly," said a pretty white moth, "but I cannot stop. I am due at a Four-o'Clock party this evening."

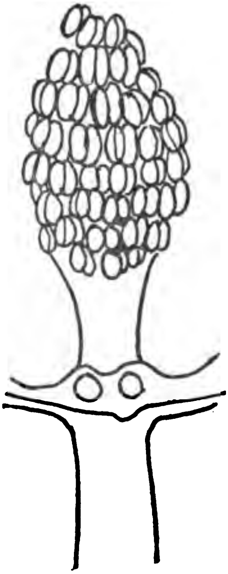
"Take me!" whispered a gaudy butterfly, already half asleep.

"Only night flyers for the Four-o'Clock," and away flew the moth.

"O, I see now why the Four-o'Clock opens up only at sundown," said the butterfly; "but I cannot understand how any Blossom or winged thing should prefer darkness to sunshine!"

Note.—A funnel-shaped calyx looking like a corolla. Keeps its calyx closed until toward sundown in order to keep out bees and other insects which it does not invite. The four-o'clock prefers moths; this is true of all blossoms that open out only at night. The long tongue of the moth reaches easily into the long throat of the four-o'clock. The stamens twist around the pistil when the pollen is ripe.

HOW THE MALLOW CURLED HER STIGMAS


First stage

The Pistil of the Mallow gave one fond look down into her seed cradle and saw that her babies were nicely tucked in, lying side by side in nice, straight rows. "Now," said she to the Stamens, "we are ready for the pollen."

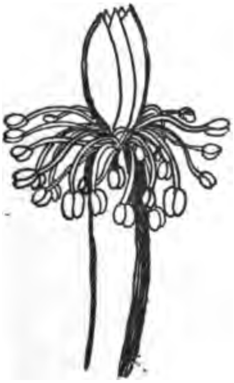
"And the pollen is ready for you," answered the Stamens. "The warm sun that we have had for a whole week has ripened it perfectly; but, dear me, how are we to get it to you? you are so tall and far away."

"Stretch yourselves," called the Wild Geranium to the Mallow Stamens.

"Bend toward the pistil," called the Trillium leaves, who were still alive beneath a neighboring tree.

"Twine yourselves around the pistil," called the Four-o'Clocks, who were just waking for the night.

"Don't listen to their nonsense," whispered the pistil. "I know a way better than their ways; at


Second stage

Third stage

least, I think it is better. Look at me."

The Stamens looked. "You are taller than we," said they; "and you have several stigmas."

"Of course," said the Pistil. "How many of you are there?"

"O, there are several of us," answered the Stamens.

"No wonder, then, that I need five stigmas to collect your pollen. But are you watching me?"

"Yes, we are watching."

"Be ready when"—and the stigmas began to droop.

"O, we know what you are going to do!" cried the Stamens.

"Hold your pollen high."

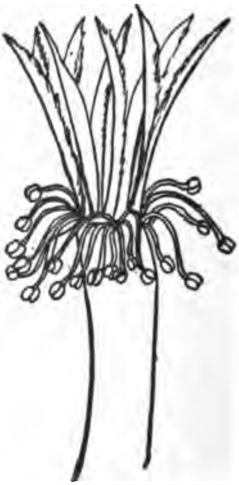
"Yes, we are holding it."

Then the stigmas drooped a little more, a little more; a little more—then they curled upon themselves, and swept across the anthers and gathered up the pollen.

"Well done, little Mallow," called the Wild Geranium blossom. And to her leaves she said, "I wouldn't have supposed that a little Mallow knew so much."

"Nor would I," answered the Wild Geranium leaves.

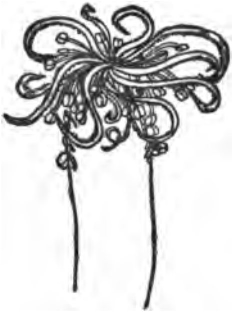
"Don't fancy that only your gay



Fourth stage, showing developed pistils.

blossoms know how to do things," said the tree that had shaded the Mallow all summer long. "Many a weed I could mention does more wonderful things than many a big flowered plant."

Note.—Based upon the botanical fact that the Mallow turns her stigmas when ripe toward the stamens.



Fifth stage, showing ripe pistils curled down to reach the ripe pollen

THE LESSON THE DEWBERRY TAUGHT HER BLOSSOMS

"Do you know," said the Dewberry Bush to her cousins, the Huckleberry and the Blueberry, "I think that stamens and pistils think they are the whole thing."

"What do you mean?" asked the Blueberry, carefully adjusting her white powder, which she believed was the only thing that distinguished her from the Huckleberry.

"I mean that they think that pollen-getting depends wholly on them. In some blossoms the stamens think they have only to bend toward the pistils; in others the pistils think they have only to bend toward the stamens; in others the stamens think they have but to stretch up to the pistil; in others that the pistil has but to stoop to the stamens. All summer I have heard only what the stamens do and what the pistils do. I am tired of it; and I propose to teach my blossoms that they can't control the whole plant world."

"The conceited little things!" said a big Rhododendron. "I shall be interested to see what you do. Maybe I shall teach my blossoms a lesson too."

"Just watch me," said the Dewberry Bush. "The moment my pistils and stamens begin to talk pollen I—well, you watch. We have our secret, haven't we, little Flower Stalk?"

"Indeed, we have," nodded the flower stalk.

"Good gracious!" said the Stamens inside the flowers, "what is the matter with the flower stalk? She nearly shook off our pollen."

"Do look out and see what is happening," added the Pistil.

"How can we, when the flower stalk is behind the corolla?" asked the Stamens.

"Well, never mind; perhaps a heavy bee alighted on the stalk."

"Dear me, I hope it isn't some child who thinks he will gather us before we are berries."

"Hear them," laughed the flower stalk to herself. "They don't know what I am doing."

Several days passed by. "Keep your ears open, little Flower Stalk," said the Dewberry Bush. "It is at about this time every year that those stamens and pistils begin their pollen talk."

"They have begun already," answered the flower stalk. The Dewberry shook from head to foot. "What are they saying now?" she asked.

"I heard the pistil say that she had tried and tried, but that she couldn't reach the stamens," answered the flower stalk.

"What did the stamens say to that?" asked the Dewberry Bush.

"They said, 'Never mind; we will bend toward you, dear Pistil.' "

Again the bush shook with laughter. "Very well, we shall teach them a lesson."

"What are they saying now?" asked the Bush a few days later.

"They are very sad," said the flower stalk. "They have asked every flower near by to tell them how to get their pollen to the seed babies; and they have tried every device that has been recommended to them."

"Very well, then; perhaps it will be well for *you* to speak to them," said the Bush.

"I will, at once," answered the flower stalk, "for I think their pollen is dead ripe."

So the flower stalk spoke up through the style and said, "Don't grieve, Mother Pistil; I am going to help you."

"You!" exclaimed the Pistil. "What have flower stalks to do with pollen?"

"Ah, my dear Pistil; you and your stamens have been very, very—shall I call it conceited?"

"Why, what *can* you mean?" asked the astonished Pistil.

"I mean that you have thought that no one can be of any help to you outside your own little household circle. Of course, we all admit that you and your stamens are the *essential organs* in seed-growing; but there are other parts of a plant that might help. Watch and see how *I* am going to help you."

The Pistil and the pollen-loaded Stamens looked at each other, but said not a word.

Presently something began to happen; their blossom-house began to tilt; soon the pistil and stamens could no longer see the sky, but found themselves looking straight out toward another dewberry bush beside them; soon they could see not even the dewberry bush, for the flower stalk was bending more and more.

"Dear me!" cried one Stamen, "my pollen is falling out."

"O, and mine too," cried another Stamen.

"O, O, and mine too," cried every other Stamen.

"O, but see! see!" cried the Pistil, joyfully. "See! see!—your pollen is showering down upon my stigma.

Now I understand. The flower stalk is helping us; it is bending so that your pollen *has* to shake out; and it *has* to fall upon my stigma. Now I shall go to sleep content; our babies are saved."

"I am sleepy already," yawned one empty Anther.

Just then a petal floated downward and the Pistil and Stamens looked out through the opening and saw the bended flower stalk.

"You are right, and we thank you, kind Stalk," said the Pistil, gratefully; and the stalk, seeing that the Pistil was already beginning to feel sleepy, said not another word. Before she went to sleep the Pistil told the story of the flower stalk to her seed babies; and the babies must have told it to *their* babies; it is said that never again did a Dewberry Pistil try to get pollen for her babies until she felt her blossom-house begin to droop, droop, droop.

NOTE.—Raspberries, thimbleberries, blackberries all belong to the rose family. The dewberry is the low-clambering blackberry that runs wild everywhere. So well are its blossoms fertilized that it flourishes in spite of barren land and rocky soil. It secures self-fertilization by drooping its blossoms when its pollen is ripe, a common device in blossoms where the pistil is longer than the stamens.

THE BLOSSOMS THAT JUDGED TOO QUICKLY

Said the Snapdragon to the Rhododendron, "How do you expect a bee to give pollen to your pistil if she holds her head so high in the air?"

Said the Rhododendron to the Snapdragon: "How do you expect a bee to give pollen to your pistil if you keep your mouth closed so tightly? Why, the tiniest insect could not make his way through your closed lips."

"Indeed!" answered the Snapdragon; "but you do not seem to see that a bee would have to be as large as a bird to touch your pistil as it entered your blossoms."

"O, that is a different thing," said the Rhododendron.

"Well, I am not so sure," said the Snapdragon. "But what do you mean, Rhododendron?"

"Watch me and perhaps you will find out," answered Rhododendron.

"Very well, I will watch you; and meantime you will do well to watch me," answered the Snapdragon.

So the two blossoms watched each other; and what do you suppose happened? Why, after a time, *when the pollen in each was ripe*, the Snapdragon opened her mouth so wide that any bee could find his way, and the Rhododendron pistils began to bend and bend downward toward the stamens until even a small bee could not fail to brush across the stigma as he entered the blossom to find the nectar.

Then the Rhododendron shook her bells in glee; and the Snapdragon laughed so cheerily that to this day—so I have been told—the Snapdragon's mouth is more open than ever it was before.

HOW THE WIND HELPED THE ANEMONE

For a long time the Hazelnut Tree, the Alder, the Elm, the Walnut, the Birch, the Oak, the Willow, and many other trees watched the flowers in their struggle to learn how to secure fertilization, one flower from another.

"Why don't you ask the wind to help you?" asked the Oak, as he watched the blossoms of the Anemone struggling to find a way to secure cross-fertilization.

"I don't know what you mean," answered the little, frail blossom, looking up at her protector.

"Dear little Anemone!" said the big Oak. "I have spread my branches over you to keep away the hot sun's rays, lest they wilt your fragile white sepals; and I have shielded you from the wind with my big trunk; and yet, little Anemone, the Wind is your friend and will help you. Indeed, he will take care of your pollen; so that you can rest and enjoy the beautiful spring days as I do."

"Why, have you no work to do, no pollen to prepare, no seed babies to provide for?"

"I have the same work to do that you have, little Anemone," answered the Oak, "but my work is finished. The wind has scattered my pollen, and the Oak Tree seed babies are long since sweetly sleeping in the warm brown earth."

"Tell me, tell me," asked the Anemone.

"There isn't much to tell," said the Oak. "Only this: when the wind comes open your sepals wide; let him blow away your pollen—the farther the better. One thing, however, I must advise you: have a great deal of pollen and see that it is very light and powdery. Now, there are blossoms—the Milkweed's, for example—who make a pollen so sticky that the wind could never move a grain of it. Why, the Pine Tree tells me that it is as sticky as her pitch!"

"I wonder why the Milkweed makes her pollen like that?" asked the Anemone.

"I'm sure I don't know," answered the Oak. "I once asked a bee who had left two legs in a milkweed pollen box, but my question made him so angry that he tried to sting me."

"How strange!" said the Anemone.

"Yes, I could never understand why the bee was so angry. I am sure I asked the question politely. But listen! The wind is coming! I can hear him in the distance!"

"O dear, I am afraid of him," gasped the Anemone.

"Be brave, little one; open your sepals wide and let him blow away your pollen."

"Ooo-oo-oo!" The Anemone felt the wind drawing nearer and nearer.

"Never fear, little Anemone," said the Oak, encouragingly. "My trunk will protect you. Here he comes—here he comes!"

A moment later the little Anemone was trembling from head to foot. Every one of her sepals and all of her pollen had blown away and she was a sorry-looking little blossom.

"All right, little one, all right!" called the Oak. "Your sepals are gone, but your pollen has gone too!"

"I see! I see!" And she nodded her sepal-less little head at her sister Anemones beneath the Pine Tree.

"Thank you, O thank you," the Pine Tree Anemone called to her. "Brave little Anemone! Watch, we are going to do the same when the next gust of wind comes."

"Oo-oo-ooo-oo!" screamed the wind. And the Pine Tree Anemones, every one, faced the gust as bravely as had the first little Anemone. And when the gust had passed, behold! two more little Anemones had lost their sepals—and their pollen too.

"What an easy way!" they all said. "Now we will finish up our work for our seed babies and go to sleep."

"Yes," said the first little Anemone, "it is good to get our work done and to go to sleep before the hot summer comes. I am sure I could never endure the midsummer rays of the sun."

"I shall tell every blossom I meet this summer how brave you were, little Anemone," whispered a little ray of sunlight that came shining down between the leaves of the Oak Tree.

And the ray of light must have kept her word, for as time went on many, many blossoms learned to make friends with the wind. And there are many even to this day who have remained content to depend upon the wind to scatter their pollen for them.

"But tell me," asked a little Violet, "why have you no color, no perfume, no nectar?"

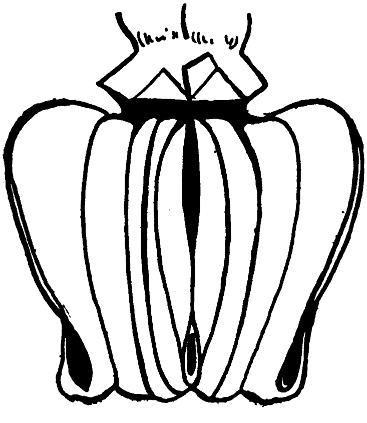
"Why should we have color?" the wind blossoms asked. "The wind has no eyes; he cannot see color. And why should we have perfume? The wind cannot detect perfume? And why should we have nectar? The wind cannot sip; nor does he make honey. All that wind flowers need are broad, hairy pistils, upon which to receive pollen, and a large amount of pollen for the Wind to catch up and whirl off through the air."

THE MILKWEED POLLEN BOX

"Let us think out a way for scattering our pollen that shall be so sure to succeed that we shall soon be the best-known plant by the roadside," said a bunch of Milkweed blossoms, shaking their heads gayly in the wind.

"Yes, let us think out a way that shall take our neighbors by surprise," said another bunch of blossoms.

"Why, brother!" said a third bunch. "Why not be content with things as they are? Certainly, our blossoms need no improvement. See how large and beautiful we are, all bunched together. And how strong and hardy we are!"



"Yes, we are strong and hardy now," said the first bunch of blossoms, "but you know what Mother Nature told us—that upon our methods of securing pollen from distant plants depend our beauty, our hardiness, and our strength. We are indeed beautiful, but we should see to it that we remain beautiful."

"Why not wait until we begin to show signs of growing weak and unlovely? It will be time enough then to talk about methods for cross-fertilization."

"Stop quarreling and listen to me," said the first bunch of blossoms that had spoken. "I have been thinking about this for a long time; I have watched other blossom devices for securing pollen, and I have thought out just the very best way for us to secure pollen for ourselves."

"Tell us, tell us!" cried every bunch of blossoms except the lazy bunch, who was really half asleep.

"Well, as I have watched our neighbors I have made up my mind that sticky pollen is about the best device that there is. It seems to succeed perfectly; the wind cannot blow it away before it is ripe; the rain cannot spoil it. I propose, then, that we make a very sticky pollen—stickier than any other pollen—and that we make boxes to keep it in."

"Great!" cried the other blossoms. "Great! great! Let us make it so sticky that a bee will lose his leg rather than go away without taking some of it with him."

"Great! great!" cried the blossoms, and the Milkweed Ponpons nodded their heads until the air was heavy with Milkweed fragrance.

"Fortunately, we already have a heavy perfume," said one of the Blossom Ponpons.

"Yes, and it is very sweet," said another Ponpon.

"All this is very well," drawled the lazy bunch of blossoms; "but I don't like to give up our first method of self-fertilization. What if all the bees were to die? What, then, would sticky pollen avail us?"

"Who ever heard of all the bees dying!" buzzed a big, fat Bumblebee, who was attracted by the heavy perfume in the air. "Do I look as if I and all my kind could die? Buzz-buzz-zz-zz!"

"And I am sure," buzzed a little Honeybee, "that all of my people are not going to die! Why, my Queen alone has laid eight thousand eggs!"

So then the Milkweed Ponpons set to work—all except the lazy one, who died out a long time ago and has been wholly forgotten by her brothers and sisters. Even Mother Nature never mentions her name, the foolish little Ponpon!

Never were blossoms so busy as these upon the Milkweed stalks. They made boxes and boxes as long as the sun shone; and when all was finished they had the neatest little packages of pollen, in flat boxes, the boxes standing on end—and so arranged that if a bee alighted upon the outside of the blossom, his foot would surely slip in between the crevices between the petals and sink straight into the sticky pollen.

"Now let us keep very still and watch for visitors. We shall soon see whether or not the bees like our device. Let us fill the air with perfume first," said one of the ponpons." So the blossoms shook their heads until they were dizzy, and the air was heavy with Milkweed perfume.

"How sweet!" buzzed a little Honeybee; and straightway she alighted on one of the blossoms. "This is a slippery blossom," said she, and as she spoke in went one of her legs. With effort she pulled it out and flew away to a barberry bush to clean the sticky stuff off.

"There! see how our pollen sticks to her feet! Good! good! And see—the bee has flown into the tree. There! she is still digging away the pollen! O, we have discovered the very best scheme that ever was." And again the Blossoms laughed and danced until the air was heavy with fragrance.

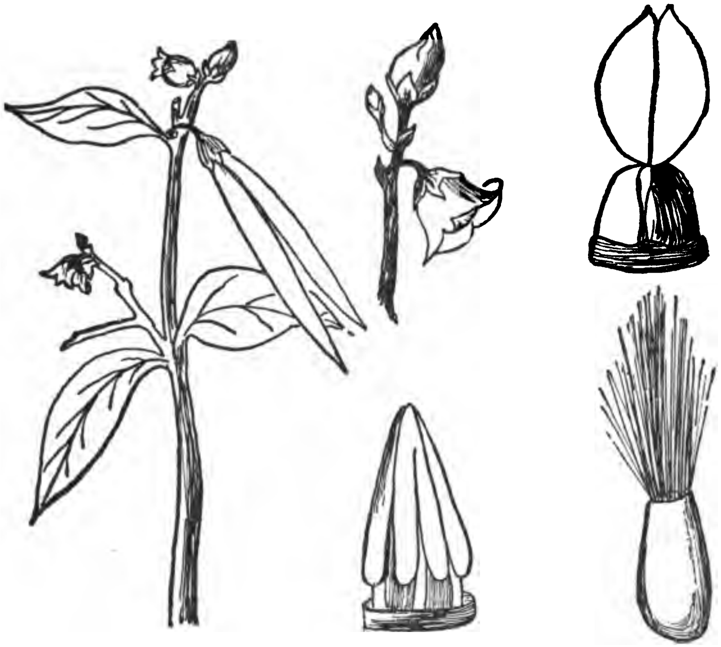
"Milkweed fragrance always attracts me," said a large Bumblebee, flying into a bunch of blossoms. But before he could stop his buzz, in went one of his legs into the sticky pollen. "Ugh!" said he, and he tried to pull himself out. "Ugh! Buzz-zz-z! Is this a bog, I wonder! Buzz-z-zz!"

But buzz and pull as he might, this bee, who was rather young and so not very strong, could not get himself free. "Well," said he at last, tired of struggling, "I will leave this leg with you, Milkweed blossoms. I have several and can spare one, I suppose; besides, I have wings and I fly more than I walk. So, take the leg, if you will; away I go! Buzz-z-zz-zz!" And away the bee flew, leaving his leg behind.

"We don't care for your leg, Bumblebee, but we are pleased to see that as you struggled you covered yourself from head to foot with pollen. We trust that you will carry this up and down the entire country to all other Milkweed plants, for that, of all things, is what we wish."

"I can't say that I really enjoy having these bees get caught in our pollen," said one rather timid bunch of blossoms. "I thought this one would surely break our stem and stalk."

A handsome Dogbane Bush watched the Milkweed's new way of securing cross-fertilization, and as she watched the bees and saw how sure the new device was proving itself, the Bush said to itself: "I can do something of that kind myself, I think. I don't care to build boxes, but I see a way that will be just as good, I think. I will manufacture sticky pollen, but I will place it between my two anthers; then when the bee sticks his long tongue between the anthers in order to reach my nectar cup, his tongue will be covered with pollen."



So the Dogbane set to work; her device worked well for herself; of that there is no doubt, for think how numerous the Dogbane plants are. But, alas for many a tiny little moth that fluttered its life away trying to get out of the trap which the Dogbane set for pollen-bearers of every kind; for the anthers held very tightly, and it was like getting into a Milkweed box to get into their sticky clutches.

NOTE.—Notice the peculiar way in which the five short stamens are joined into a ring, and notice that the anthers almost grow to the stigma. What would this indicate? The waxy or tough pollen which one finds in the Milkweed in abundance—notice how it clings. Often one will find a bee leg sticking in this pollen. From the Dogbane one frequently finds a moth hanging by its tongue, it having been unable to get away when once its tongue had penetrated the pollen. These plants in their zeal to secure cross-fertilization, sometimes overreach themselves and destroy their friends who would help to distribute their pollen.

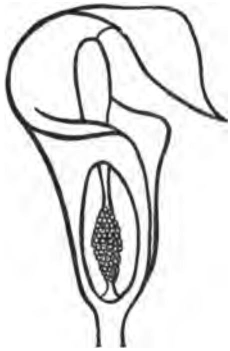
HOW JACK-IN-THE-PULPIT BUILT A PRISON

"TALK about imprisoning insects," said Jack-in-the-Pulpit to Lady Slipper, "you should watch me. I do not set my prisoners free for days and days."

"Tell me about it," laughed the Lady Slipper; "perhaps I may wish to borrow your tricks."

"No, you do not need them," said Jack.

"And why not, pray?" asked Lady Slipper, haughtily.



Showing cluster of blossoms inside the spathe.

"You do not depend upon flies to visit you and carry away your pollen," answered Jack. "Let me explain. First, look down into my spathe. Tell me, what do you see?"

"I see," said the Lady Slipper, "a tall pistil and I see—"

"Nonsense," interrupted Jack. "That is not a pistil; that is a spike of blossoms. You carry your blossoms outside; I prefer to shield mine with this spathe, which is sometimes called my pulpit. Did you see anything else when you looked in?"

"I was about to say," continued Lady Slipper, severely, "when you so rudely interrupted me, that I saw stiff hairs, all of which seemed to be pointing downward into your spathe."

"Quite right," said Jack, paying no attention to the Lady Slipper's rebuke. "Those hairs are my prison doors. Listen, and I will explain. We Arums prefer to attract flies rather than bees."

"Why?"

"I don't know. Our ancestors arranged all that, and we are quite satisfied to make no change. The flies come quite early—often some days before our pollen is ripe. Therefore, when they enter our spathes and crawl down over our spike of blossoms they neither bring pollen nor is there as yet ripe pollen for them to carry away. And so, since these flies are such restless creatures, when once they enter our spathes we keep them there until the pollen ripens. Look into my spathe again; you will find flies imprisoned there."

"Yes, there are a dozen of them, poor little things!"

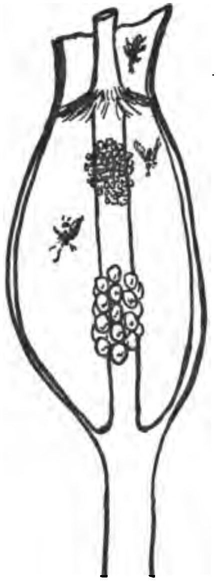
"Nonsense, you foolish, showy Lady Slipper! They are not 'poor little things'! They are happy and contented, and they have nectar such as they like best to eat as long as they remain in their prison."

"O, I am glad to know that," said Lady Slipper, meekly.

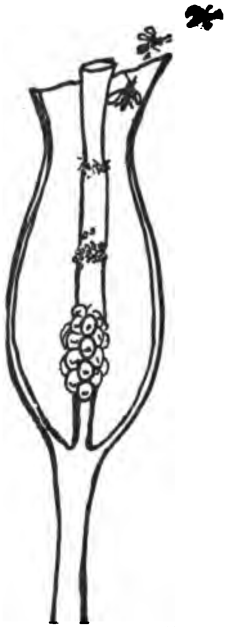
"As to those hairs which you saw, I will tell you about them. They point downward for a good reason; indeed, there is a reason for every line, every hair, every odor, every color—for everything that one sees on every blossom; and usually all these have to do with fertilizing the pistils."

"My beautiful pink color serves as an attraction for the bees," said the Lady Slipper; "but tell me, Jack, why do you have those stripes?"

"For the same reason that you have a pink blossom," said Jack; "my flies prefer stripes—that is why. But don't interrupt; let me finish telling you about the prison doors—the hairs. When a fly enters the spathe he walks down the hairs to the nectar space at the bottom of my spathe. There he eats nectar and drinks water—sometimes he drowns in the water."



Hairs imprisoning the flies



Hairs fallen off, freeing the flies

"O, how cruel!"

"I have never heard a fly complain," answered Jack, complacently; "so don't trouble your pretty little head, Lady Slipper, about the flies. Please allow me to tell my story. As long as these hairs remain stiff and strong, serving as prison doors, it is a sign that the pollen is not ripe; for when the pollen is ripe I am quite as anxious as are the flies to be rid of them and to send them off with the pollen. Therefore I see to it that when the pollen ripens, the hairs ripen too; then the hairs fall off, the fly crawls up over the blossoms, and, now laden with ripe pollen, away the little carrier goes. At this same time I know that other Jacks have freed their prisoners; therefore I wait for pollen-laden flies to come to me from other blossoms. And they come, many of them, each bringing pollen which it leaves upon my ripened blossoms as they crawl down the spike into the nectar space. So, after all, Lady Slipper, my method of securing pollen isn't so very different from yours. I imprison my flies a little longer; but they are satisfied, else they would not come year after year, would they?"

But Lady Slipper had fallen asleep; and before Jack had time to rebuke her for not listening, down fell the beautiful pink blossom to the ground.

"I shall fall asleep myself some day, I suppose," said Jack to himself; "it happens to us all. So good-by, little Lady Slipper, good-by. Very likely our seed babies will meet next spring and talk this matter all over again among themselves. So good-by, Lady Slipper, good-by."

THE WAY OF THE BELLFLOWER

Beside the bellflower grew a fine, strong blossom-covered plant whose tall stamens and short pistils were arranged in just the best position for pollinating, at least so the tall blossom-covered plant thought.

"Have you noticed the Bellflower?" whispered the blossom-covered plant to her Pistils and Stamens. "See how the flower cups droop. The pollen will fall out, I am sure."

The Pistils and Stamens of the blossom-covered plant looked at each other. "What if our flower stalk should droop like that of the Bellflower? How, then, could I get your pollen?" said the Pistils.

"You would lose it, of course," said the Stamens, raising their heads higher still above the pistils. "I cannot understand the Bellflower. Has Mother Nature not told her that stamens must drop their pollen down upon the pistils?"

Just then the bells began to swing. Back and forth, back and forth until the garden was filled with the sweet music of their ringing.

"We have a way—way—way!" rang the bells. "A way—a way—a way!"

"They will shake out every grain of their pollen!" cried the Pistil Mothers of the blossom-covered plant.

"O, no!" rang the bells again. "We have a way—way—way!"

The tall stamens of the blossom-covered plant stretched themselves as tall as ever they could.

"What do you see?" asked the little, short Pistil Mothers.

"We see a very strange arrangement of pistils and stamens," answered the Stamens of the blossom-covered plant. "There seems to be but one pistil and that is much taller than the stamens."

"Taller than the stamens!" exclaimed the little, short Pistil of the blossom-covered plant, for these little mothers had never looked beyond the walls of their own little home. "How can the pollen shower down upon tall pistils?"

"Can't you see? can't you see? can't you see?" rang the bells, cheerily. "Can't you see? Can't you see?"

NOTE.—The stigma extends quite a little beyond the petals as if to watch out for yellow jack hornet, which is a great favorite with the bell-flower. Honeybees and bumblebees also visit frequently. The stamens being shorter than the pistil, the bell droops in order to allow the pollen to fall upon the stigma if necessary. The blossom now depends mostly upon insect fertilization, hence its beauty. Notice this tendency to droop in all blossoms whose pistils extend beyond the petals. In some cases the pistil turns downward when ripe in order to force the visitor to brush its back against the stigma as he enters the blossoms. There are many blossoms whose secrets are not easily read until the pollen is ripe; then several changes in relative position of stamens and pistil occur which reveal the secret.

THE VIOLET [1]

"Blue flashed the light across; violets were born."

A LITTLE violet, cuddled down among the leaves and grasses at the foot of the oak tree, watched the Hepaticas as they came and went; she watched the Anemones until the wind blew away their pretty white sepals, generously scattering at the same time the rich, yellow pollen.

"It is getting quite time," said the little Violet, "that

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[1] Many kinds of violets. The nectar is at the bottom of the spurred petal. The stamens cling closely around the pistil, thus making it difficult for the insects to get down into

I too should begin to push up into the light." So she spread out her wide leaves and pushed up a stem, on the end of which opened out a blossom bright and blue.

Very quickly the little blossom filled her nectar cup and built a little golden ring by which to attract the bees to the nectar.

No sooner had the plant finished her work, and the blue petals had opened out to signal the bees, when there descended upon hill and dale a storm of wind and rain. Day after day the rain fell, until the little violet was drenched through and through. Hard indeed did she struggle to keep her petals bright, hoping that the sun would once more shine out before the time came for her petals to drop away, which she well knew they must, whether the bees came or not. Three days went by, days of wind and rain, and the little blue petals could cling no longer. They drooped and shriveled and were sad at heart, for they felt that they had lived in vain; no one had looked upon them, no one had been cheered by them, and no bees had come to bring the fertilizing pollen to the seed babies.

"Don't grieve, little sister," said a voice from down among the dead leaves at the foot of the flower stalk. "Don't grieve; I am here, and I will look out for the seed babies; there shall be another violet plant next summer."

"Who is speaking?" said the blue Violet, softly.

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the nectar cup. The anthers turn inward toward the pistil, thus making self-fertilisation quite possible. Long-tongued insects, however, visit these blossoms. The violet plant has often at its base small cleistogamic (closed) blossoms, relics of the past, which never open but which serve the plant when the insects fail to come, as is often the case, since the violet blossoms early in the spring and sometimes lives out its little life amid rain and cloudiness. Several plants—the violet, the polygala, and the ginseng—retain their original method of self-fertilisation, although at the same time producing higher up on the stalk more beautiful blossoms which are cross fertilised.

"I, little blossom—I, your sister, who lives down here in the shadow of the leaves and the grasses."

"O, little sister," said the blue Violet, "forgive me. I in my grief had forgotten you. You too must be drenched with rain, I fear."

"Yes, but I don't mind being drenched," said the little closed blossom at the foot of the stalk. "I do not open out to the sun as you do. I prefer to cuddle down here among the leaves and grasses and keep in the shadow."

"But the bees cannot find you down there in the dark," said the little blue Violet; "bees love the warmth and sunlight. And if the bees do not come, your seed babies get no pollen."

"Perhaps you have forgotten, so long is it since you were just like me, that we violets down here in the shade have no need for the bees; we fertilize our own seeds, little Sunshine Sister. If only you could live long enough to see the pod full of seed babies that we have already; and if you could be here in the fall and see us shoot them out into the world, you would have no fear lest there be no violets upon the sunny bank when the next summer comes around. I am not as handsome as you, little Sunshine Sister, but I am very useful to the violet plant in times like these when the cold and the wind and the rain keeps away the bees."

"O, I am so glad to know," whispered the tall blue Violet; "now I shall go to sleep happy and content."

THE BARBERRY BEE TRAP

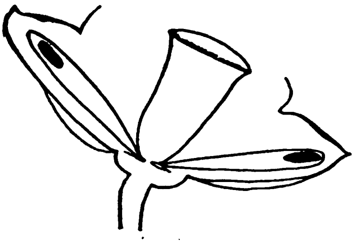
THE Barberry Bush was shaking with laughter. One might have thought that the wind was rocking the bush, but it chanced that on this particular day there was no wind.

"What are you laughing about now?" asked Robin Red Breast, hopping down upon a nearby twig.

"You are a new bird, are you not?" asked the Barberry.

"Yes," said Robin Red Breast; "but how did you know?"

"If you had lived here last summer you would know why we laugh," answered the Barberry, "for we do this little trick every year."



Robin looked at the Barberry, first out of one eye, then out of the other.

"O, you need not look like that," said the Barberry; "you can find nothing about us to help you in guessing."

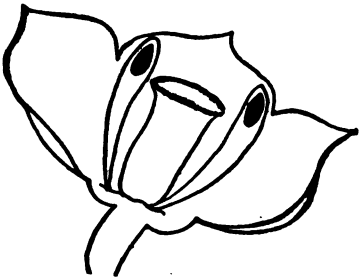
"No," said Robin; "you look like any other flower. You have six petals and six stamens, and in the middle of your blossom is a pistil."

"Quite right, Robin Red Breast; but watch; here comes a bee."

So Robin hopped nearer; and in flew the bee.

"Whisk, whisk!"—and the air was so full of pollen that Robin had to fly away to sneeze.

"Well, Robin, what do you think of our trick?" said the Barberry when the bee had gone away.



"To tell you the truth," said Robin, "you filled my eyes so full of pollen that I could not see what happened after all."

"Ask the bee, ask the bee," laughed the Barberry.

"Don't ask me," said the bee. "All I can say is that whenever I enter a Barberry blossom, just as I reach the nectar cup, something seizes me around the waist, something seizes me and something explodes in my ears, and I find myself covered with pollen."

"O, I see!" chirped Robin; and away he flew to tell his sister and his brother, his mate, and every Robin in the tree top.

NOTE.—Barberry—The stamen carries its anthers peculiarly. Notice the little door or uplifted valve which each anther has at its side. The little thorns upon the barberry are altered leaves of the year before. Notice the load of pollen hidden beneath the valves of the anthers; these must be seen when ripe to appreciate the ingenious arrangement. There are a few plants that seem to have something approaching a nervous system; that is, they are capable of reflexes. The barberry is one of these, for as soon as the bee's tongue touches the nectar cup, if not before, the five stamens which extend away from the pistil, rise, turn inward, and clasp the bee around his waist. Plants like this and the sundew, which eat meat, are sometimes considered "connecting links" between the plant and the animal world.

THREE LITTLE ARBUTUS BLOSSOMS

Three little arbutus blossoms peeped up out of the leaves and grasses. It was early spring, so early that the tiny little blossoms half wondered, as they saw no other flowers awake, if they would not better go to sleep again. The sun, however, was glad to see them; so they pushed up higher and higher until they could see the sun himself. Then the bees came, early spring bees, and these too were glad to see the little arbutus blossoms.

"We are longing for nectar," said the bees; "it is well for us that you have come."

"And we have the sweetest nectar!" said the Arbutus blossoms, blushing with pleasure. "See, here it is—at the foot of our blossoms."

"I am glad your tubes are no deeper," said the bees; "for if they were how could we reach the nectar?"

"Ah, little bees, we thought of you when we built our tubes," said the Arbutus blossoms; "they have just the right depth for you."

After the bees were gone away the three little blossoms began to look at each other.

"Why," said one, "we are not all alike."

"No," said one little blossom; "and I can't understand why you, for example, dear neighbor, have so poor a pistil. Why, it can catch no pollen, however much the bees might bring to you."

"Now, it is very strange," answered the little blossom;

"I have been wondering why you have such poor stamens; to me they look as if they had no pollen to give."

"But I have a fine pistil," said the second little Arbutus.

"And *I* have fine stamens," said the first Arbutus.

Then spoke the third little Arbutus: "It seems to me that it would be better if you followed me. Look, and you will see that while my pistil is not so very broad, it is broad enough; also while my stamens are not so very tall, they are tall enough."

The three little blossoms looked at each other for a long time; each wondered why the other was so different from himself.

"We will ask Mother Nature," said they at last; and when Mother Nature came to tell them how beautiful they had made the woodland, and how their sweetness filled the air, they asked her why they had so many forms.

"Each is just right in her place, little Blossoms," said Mother Nature; "you are climbing, climbing up life's staircase; you are on the way. You have not yet—"

But the little blossoms drooped their heads; one by one the tiny pink flower cups fell to the ground; and the seed babies knew that the time had come to grow and grow and grow.

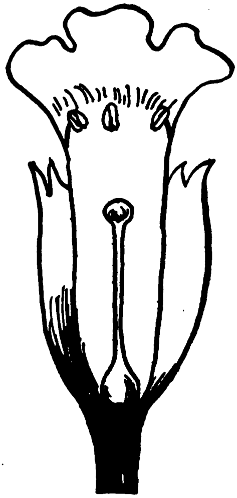
"Be as sweet as were your parent blossoms," said Mother Nature, "and the world will be the happier for your coming."

NOTE.—The arbutus is a perfect example of a blossom in the process of transition; this is seen by the different conditions found inside the corolla—in some, tall stamens; in others, middle length stamens; in others, very short stamens. Fertilized, as are all tubed blossoms, by long-tongued insects.

BLUETS AND PRIMROSES

It was long ago, O so long ago that you could never count the years, that Mother Nature bade her plant children think out ways to secure pollen from other plants. The blossoms began, as we know, to think; and they are thinking yet, for no one—boy, girl, or plant—learns any perfect way all at once; it is only by thinking and planning and trying that we ever perfect anything. Indeed, in all the summers that have come and gone since flowers began to think, some flowers have not yet worked out a perfect plan.

The gentle little bluet that carpets the field in early May has thought out one way, and the pretty Primrose that opens out at night has thought out another way to secure cross-fertilization, and a very good way it is; otherwise such a profusion of flowers would never exist.



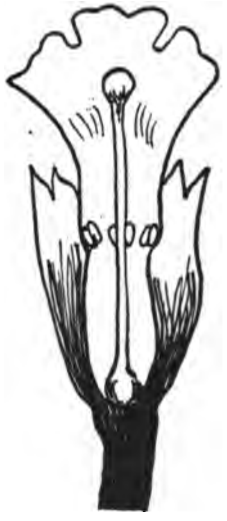
Primrose with Short Pistil

"The first thing we must do," said the Pistils, "is to have a honey-bag or a nectar cup—something that the insects like—for we have noticed that nothing attracts some creatures like sweets. So let us store sweet nectar away at the bottom of our tube, down deep, so that the bee cannot get it too easily."

"We shall have to depend upon ourselves or upon the insects to fertilize our seeds," said the Stamens, "for it is doubtful if the wind will help us, living amid the low grasses as we do."

"Then, too, our house is narrow and we are closely crowded into it," said the Pistils. "In a flower like the open Cowslip, for example, the wind could easily blow the pollen in and out."

"I think," the Primrose Stamens continued, "it would be a good plan to arrange ourselves in two different groups; let tall stamens take the places in the tubes of certain blossoms, and let short stamens take the places in the tubes of other blossoms."



Primrose with Tall Pistil

"And what about the pistils?"

"Let the tall pistils stand in the tube with short stamens, and the short pistils in the tubes with the tall stamens."

"That sounds well," said the Pistils, "but what has it to do with our seed babies?"

"Why, don't you see?" said the Primrose Stamens. "Now, suppose the bee enters a flower in which are tall stamens and a short pistil. As he sticks his tongue down the tube to the nectar cup it is sure to rub against the anthers, and so the back part of his tongue will become dusted with pollen."

"Yes," said the Pistils, nodding approvingly.

"Then, with the pollen sticking to the back of his tongue, he will fly, we will say, to a flower with a tall pistil. Again he pushes his tongue down into the tube for nectar; but as he does it, the pollen at the back of his tongue comes in contact with the tall pistil's stigma, thus supplying her with pollen. Meantime his tongue has come in contact with the low stamens and has received pollen from them. With this pollen near the *end* of his tongue he flies to a flower with a short pistil, extends the pollen-laden tip of his tongue down the tube, and there comes in contact with the stigma of the short pistil."

"An excellent plan!" exclaimed Mother Nature. "I am proud of you, Primrose and Bluet. I predict that you will become one of the most prolific plants on the face of the earth." And the words of Mother Nature came true; for the tiny bluet is seen everywhere, and millions upon millions of its little blossoms smile out from among the grasses.

THE IRIS

"Mother Nature," asked the little Blue Iris, when she had listened to the message which the Maker of All Things had sent, "tell me, how shall I make my blossoms the largest and most beautiful in all the earth?"

Mother Nature smiled down upon the eager little Iris and said: "Already the swampy soil that you have chosen will help. See also that you choose a color that the bee loves, and ask the bee to help you."

"What color do you like best?" the Iris asked, when next the bees came buzzing across the swamp.

"Blu-blu-blu-lue!" buzzed the bees; and that is why the Iris is so blue—as blue as the sky itself.

"You have an odd shape, little Iris," said the bee one day. "I can hardly find my way to your nectar cup."

"I will make a path for you, Bee," answered the Iris. And, as she had chosen the best of soil and the best of colors, she went to work to make the best of nectar paths. It took many, many centuries to perfect this path; but in the end she had a path that the blindest of bees could see.

"How large and beautiful are your blossoms!" said a little Cowslip that grew in the swamp not far from a bunch of waving Iris blossoms. "How did you succeed so wonderfully?"

"Your own bright little blossom is beautiful too," answered the sun-kissed Iris; "but I will tell you about

my blossoms if you wish to hear. It is like this: When Mother Nature told us about looking out over the world and loving and giving to everybody as well as to our own flower-cup family, we made up our minds to do our very best and produce as gorgeous a blossom as could be. First we arranged our stamens so that their pollen could not by any means reach the pistil. This, of course, prevented self-fertilization. We arranged them so that the pollen falls out through large openings between what are now my blue or purple parts."

The Cowslip stretched her head as high as ever she could. "I see your purple parts," said she, "but I can't see your stamens at all."

"Taller people than you, little Cowslip, have said the same; but sometimes it seems to me that the taller people are the more stupid. But, little Cowslip, listen! I will tell you what many children have never discovered about us. These blue or purple parts, which so many people think are petals, are stamens. Aren't they beautiful?"

"Why, I never saw stamens that looked like petals!" said the Cowslip. "Are stamens not always little needle-like things standing up in the flower cup?"

"Usually, little Cowslip, but not always. As I have already told you, our ancestors set out from the beginning to strive for the unusual; and—"

"And they achieved," interrupted the Cowslip, "with stamens that look like petals."

Just then the blue parts of one Iris blossom dropped from its stem and floated down close to the Cowslip. "We are very sleepy," they said; "we were already making ready to drop down upon the warm, moist earth and go to sleep; but we will wait just a little and show you these petallike stamens—broad and flat and blue. And, see, on each stamen is a rough and showy nectar path—three in all—do you see them?"

"Three nectar paths! I see now why the bees come so often to you!" cried the Cowslip.

"Yes, the bees come often; they should come three times as often as to some blossoms, shouldn't they? Did you ever see anything more beautiful than the iridescence of our nectar paths?"

"Beautiful," whispered the Cowslip. "They look as if the sun were shining upon them, or as if the dew drops had not faded away."

"But where are your real petals, Iris?"

"Really, I have no petals," answered the Iris; "these other three blue parts are, after all, my sepals. Many blossoms, you know, have colored sepals and no petals."

"O, yes, I know that," laughed the little Cowslip; "there are many such in our camp."

"These sepals, you will notice, droop in a graceful sweep downward; the three-colored stamens droop also; and you will notice that the stigmas which lie upon the sepals follow the curve, also, but turn upward at their ends. Now, since we have taken so much pains to arrange our sepals and stigmas wisely, you may be sure that our anthers are somewhere near by."

"Of course!" laughed the little Cowslip. "We Cowslips understand that, for, of course, you have taken all this trouble in order to attract the bees."

"It would have been foolish for us to take trouble to build elaborate nectar paths and then forget our anthers, would it not?"

"Certainly," answered the little Cowslip; "for, after all, upon our anthers and their pollen depends the fate of our entire plant."

"True," said the Iris Blossom, turning upon its side. "Look! Do you see between the gorgeous sepals and the stigmas three erect little anthers?"

"Yes, yes," cried the excited little Cowslip. "How wonderful you are! And to think that we have grown side by side in this swamp for all these years and I never suspected what you were doing!"

"People who think themselves wiser than either you or me have looked at me for years, and they have never discovered my secret yet," answered the Iris, half scornfully. "But let me explain the coming of the bee, little Cowslip. And I must hurry, for I am growing very, very sleepy. When the bee alights and walks up my nectar paths she has to pass directly under an anther—there is no other way by which she can reach the nectar."

"I see! I see!"

"Then when she has quaffed the cup she has to back out again, there being no room for her to turn around."

"Delightful!" cried the little Cowslip. "How wise you Irises are!"

"Wise enough to assure covering the bee's back with honey before she leaves our blossom, of that you may be sure. Only one thing about our blossoms do we deplore. Some time perhaps we shall learn a way to remedy it; but at present the spaces between our sepals are rather large; they allow certain butterflies and moths to enter. These creatures have long tongues, you know, and they suck in up through the spaces and steal our nectar without bringing or carrying away any pollen. Fortunately, however, living in rich, swampy soil, we secrete a great deal of nectar and so can afford to lose some. Otherwise, these spaces between our sepals would be the ruin of us; for all understand that without the exchange of pollen our blossoms would soon die."

But the Iris blossom could keep awake no longer; the summer breezes softly called her, and she sank away into the sweetest sleep that ever an Iris knew.

NOTE.—Cross-fertilized by bumblebees, honeybees, and bee like flies—the syrphidæ. The insect in order to reach the nectar cups must crowd in between the overhanging pistil part and the handsome-colored part beneath which are concealed the anthers. The nectar paths are strongly marked. The large spaces between the colored parts permit thieves to enter and steal the pollen; especially a certain little yellow butterfly does this.

CATNIP TRICKS

"I MUST go and look at my catnip beds," said Mother Nature. "Ah, here is a whole field of it. Good! Now I am sure that the cats and kittens will have catnip when they are ill."

"What are cats and kittens," asked the Catnip. "I know no such plants."

"You will never know them," said Mother Nature; "they do not belong to your kingdom."

"I wish I knew what you mean," said the Catnip, plaintively.

"Well, dear Catnip, I will tell you; but I fear you will not understand. All beings like you, with roots and leaves and fruit of one kind or another, belong to the vegetable kingdom. Below you is the mineral kingdom, to which all rocks and stones belong. Above you is the animal kingdom, which includes all creatures that breathe air and move about and eat food and—"

"Do they have bills?" asked the Catnip; "for one day a creature came flying into our field, and it nipped off one of my flowers."

"Yes, some of them have bills."

"And one day a greedy creature with black fur and big yellow eyes came and rolled in my bed. Was it an animal, do you think?"

"I think it was the very animal that I was speaking of," said Mother Nature, "a cat. Kittens, dear Catnip, are baby cats; but tell me, Catnip, what have you been doing? What have you learned?"

The Catnip opened her mouth very wide; indeed, she has never shut it yet; and this is what she said: "Well, dear Mother Nature, my family is, you know, very, very large; we Catnips are scattered everywhere; you can tell us easily by our *square* stems and *aromatic leaves*."

"There are indeed many in your family," said Mother Nature, "and you have yet the same old family traits that belonged to you ages ago."

"You notice, dear Mother Nature, that we Catnips have developed a wide-mouthed blossom."

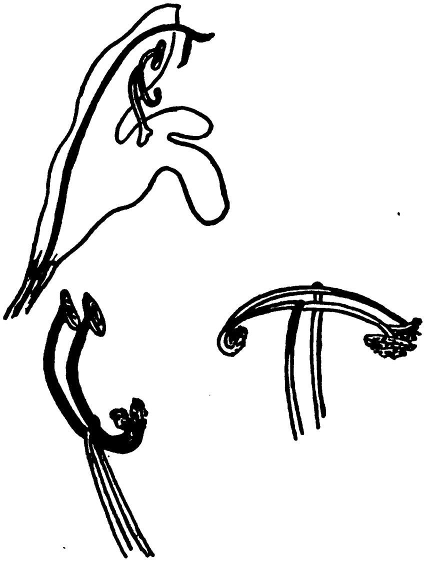
"Yes," said Mother Nature.

"And you notice that my lower lip is thick and rough, and that it has a nectar path."

"Ah, yes, I see," said Mother Nature, much pleased. "It means that you have learned to invite the bees, and that you have arranged a nectar path which leads, I suppose, to your nectar cup?"

"Yes," said the Catnip, blushing with pleasure. "Of course, I have a nectar cup inside my blossom, and I have already four nice babies waiting for a bee to bring us pollen. I find my way of attracting bees quite successful; my color and my odor and my sweet nectar bring me as many guests as I need; but you should see a curious scheme my sister, Sage, has invented as a means of scattering her pollen. It makes me laugh every time I think of the way she powders the bees when they come for nectar."

"O, do tell me," said Mother Nature.



"Well, in the first place, her mouth is always open, like mine. She has a long pistil which curves with the curve of the upper lip. The tongue ends in a little forked tip, and extends for a time only a tiny bit beyond the upper lip. Inside, and on either side of the upper lip, near the doorway, are two stamens nicely balanced on a rod. In walks the bee. He touches the stamens—when down fall the two anthers upon his back! By the time he has taken the nectar and backed out of the flower, you may be sure, he is well powdered.

"And there is one excellent point more," said the Catnip. "The pistil, by the time the pollen is ripened, grows much longer; and it hangs down, so low that no one can enter the blossom without rubbing its back against the stigma; and as the bee's back is more than likely to be covered with pollen, you know what happens."

"Excellent! excellent!" said Mother Nature.

"Another of our family—the Horse Balm—has a queer-looking pollen catcher," the Catnip continued. "It has a small, bell-shaped flower, the margin partly fringed and partly toothed. But the odd thing about Horse Balm is that the stamens extend outside the bell fully twice the length of the bell; I have seen children play tongs with the blossom of the Horse Balm, for by pinching the bell-part together the two anthers touch like a pair of tongs, I heard one child say. The pistil too is very long, extending, like the stamens, far beyond the margin of the bell."

"It must be very easy for that pistil to receive pollen from its stamens," said Mother Nature, amused to hear the Catnip talk.

"Yes, but in our family we prevent that by not allowing our stamens and our pistils to ripen at the same time."

"You may well take pride in your family," said Mother Nature; and she hurried away to the Horse Balm, whose bells she could hear ringing in the soft summer air.

NOTE.—The entire mint family is interesting. Notice the square stems; and all members of the mint family have much odor. Blossoms are irregular, mouths oddly open, forked pistils extending. In the catnip notice how the lower pair of stamens compares in length with the upper pair, and how both pairs follow along the under and the upper lip. In the sage, the anthers tilt upon a stamen tip in so dainty a manner that at the entrance of an insect the anthers tip over and discharge their pollen upon the insect's back. These anthers tip something as a tip car tips, so perfectly balanced are they. The child will enjoy the parallel.

THE LADY SLIPPER

"WELL, if you are not an odd-looking blossom!" said a new little Bee, out for his first honey-gathering.

"I am very glad to have attracted your attention, little bee," answered the Lady Slipper. "Won't you walk into my dining hall? I have the table richly laid for you."

"How very hospitable, beautiful Blossom! Your pink color is very beautiful, and I am so fond of pink."

The new little bee flew round and round, looking in at the flower at every angle. "I don't find your door, Lady Slipper," buzzed the new little bee. "You are not playing a trick upon me, are you?"

"O, no, little Bee! I never play tricks upon my guests —that is," she whispered to herself, "not until I get them well into my blossom. Fly right in, little Bee, at my front door. To be sure, it is not wide open, but there is space for a little bee like you to enter."

"O, yes, I see," said the new little bee; and in he flew.

"What a beautiful dining hall!" he exclaimed. "How soft and pink the light, shining through your pink walls! It is like a fairy bower; but where is the nectar, my hostess?"

"Are you hungry, little bee?" asked the Lady Slipper.

"Yes," said the little bee; "for this is my first trip abroad, and I have visited no other blossoms."

"Very well, little bee; follow the nectar path and you will find the nectar."

"Ah, I have found it, Lady Slipper. Thank you. How sweet it is! But, dear me, why do you hide it away down in the depths of your blossom?"

"I have a good reason for that," the Lady Slipper answered; "but is not sweet nectar like mine worth searching for?"

"O, yes; yes, indeed. But, Lady Slipper, I can eat no more; perhaps my nectar bag is yet very small, for I'd like to eat it all."

"You have had all you need, little bee. Now fly away and make room for another visitor."

"Very well, and good-by, my hostess. I will come again some day. Good-by, good-by!"

Then the new little bee began to search for a way to escape. First he tried to escape by the same door through which he entered; but no, there was something that hindered him. Then he tried to push his head through the pink walls, but they were too strong for him.

"O, Lady Slipper, have you imprisoned me?" cried the little bee.

"No, no, you foolish little bee; look sharp and you will find a way out."

"Where, Lady Slipper, where?"

"Find it, find it," laughed the Lady Slipper, who loved to see the bees tumbling around searching for the only little doorways through which they might escape so easily if they but used their wits.

"If it were not that the Lady Slipper nectar is just what I like best, I would never come again," buzzed the new little bee.

Just then, down at the base of the blossom, the bee saw a spot of light. Yes, it was sunshine; it must be an opening. So the bee buzzed toward the spot of light, and in less time than it takes to buzz the new little bee found himself out in the open.

"You can never trap me again," said the bee as he buzzed away. "Never again! Never again!"

And the Lady Slipper laughed to see the pollen on the new little bee's rumpled back—"enough to fertilize a dozen Lady Slippers," she said.

NOTE.—The lady slipper is an orchid. The devices which orchids have for enticing the bees are most interesting; and there are as many, one might say, as there are kinds of orchids. The entire "slipper" in the orchid familiar to us is one petal, in sac form. On examining, it will be found that there are two other petals which are alike, the slipper being an odd one. Also there are three sepals, colored like petals, and these are alike. There is but one stamen—broad, flat, and heart-shaped—and this is united with the pistil and is placed at the axil of the blossom facing this sac-shaped petal. (The moccasin flower, or stemless lady slipper, has three stamens.) Beneath this broad, flat stamen, on its underside, is the pollen; and as the insect crawls in beneath this heart or spade-shaped structure, the pollen adheres to his back. There are many fringed orchids, known by the peculiarly separated parts of one of the petals. Arethusa, ladies' tresses, twayblade, coral root, adder's mouth—all these are orchids, and all are distinguished by the great irregularity of the petals and peculiar devices for powdering the insect with pollen. That these orchids are cross-fertilized is evident from the great beauty of the blossom and their elaborate coloring; for cross-fertilization, like cross-breeding in animals, produces the finest of its kind.

"NO CATS, NO CLOVER"

Once upon a time there was a prince who loved the clover fields; so to his gardener he said: "Cover the fields with clover. Let me see from my window, as far as an eye can reach, a sea of pink, and let me hear the humming of the bees among the blossoms."

The gardener bowed low and promised to do as the prince wished; and never in all the world were there such fields of clover. The air was sweet with their fragrance, and the bees came from miles around, attracted by the sweetness of the odor.

The prince was delighted; never had he so enjoyed a summer, and as a mark of favor he raised the gardener to a high office. Henceforth he did no more work, but superintended an army of workers whose chief care was to care for the clover fields.

For three summers all went well. Then the prince began to be disturbed by the cats that crept around among the clover everywhere and among the wheat and corn.

Now, the prince hated cats, and one day he called his soldiers to him and said, "Go forth and slay every cat within my domain; and off goes the head of every one of you if a single cat remains alive."

Naturally, with this threat hanging over them, the soldiers worked faithfully, and in one week not a cat was to be found for miles around.

And so pleased was the prince that he knighted his soldiers every one.

Again the summer came. "Soon I shall see my clover blossoms," said the prince; and he waited day after day for the blossoms to sweeten the air. Alas, there was but a poor, scraggly lot of blossoms, and hardly an odor from them came to the prince.

"What is the matter?" the prince asked, calling the one-time gardener to him.

But the gardener could not explain. Can you?

NOTE.—Based upon a saying of Darwin—"No cats, no clover." Bee nests are eaten by field mice; therefore if there are no cats to catch the mice, the mice will eat the baby bees and there will be no bees to scatter pollen; hence poor clover.

THE HONEYBEE

LITTLE Apis Mellifica flew out of the hive one sunshiny morning to make her first trip abroad. The world looked very large to her; but as she had several thousand far-sighted eyes, that is, eyes for looking into the distance, it is little wonder that the world looked very large. At first she seemed to see only objects in the far distance, but after a little she found that by using her three near-sighted eyes she could distinguish objects on every side and round about her.

"A beautiful world," she said, "for all it is so large. I like the color that I see here and there; and I think I smell honey." Then something inside little Apis's heart told her to fly off toward one of the spots of color that she saw not so very far away.

"Buzz-zz-zz!" and she flew straight into the blossom of a Morning-Glory. The blossom rocked and swayed and seemed likely to fall to the ground. Apis, however, soon quieted down and the blossom held tight to its little stalk.

"You took me by surprise, Apis," said the Morning-Glory.

"I am rather surprised myself," answered Apis, sweetly, "for I hardly knew where I was flying."

"I see that you are a new little bee," said the blossom, kindly; "that is why you are so surprised. By and by you will know every blossom, and will fly hither and thither in the sunshine, gathering honey from us all."

"Yes, gathering honey is what I wish to do," answered Apis; "indeed, that is what I was sent out from the hive to do."

"Well, Apis, begin right here," answered the Morning-Glory. "I have some ready for you, and you are the first visitor this morning. Have you your honey bag with you?"

"What a question!" laughed Apis. "As if I could come without a honey bag. Indeed, the last thing that I heard when I flew out of the hive was some one calling, 'Be sure you take along your honey bags.' "

Tap! tap! Tap! tap! tap!

"What is that?" asked Apis, raising her funny little head and looking around.

"That is rain, Apis; you will have to stay right here until the shower is over."

Apis looked out of the blossom. Yes, raindrops were falling; and, worse still, so Apis thought, the sun had gone behind a cloud.

"Yes, thank you, I will stay," said Apis; "for bees like me never go out when the sun is not shining."

"Never mind," said Morning-Glory; "see we have spread a feast for you; here is more honey than you could carry away at one visit. Help yourself, for not only will you help yourself, but you will help me, who have more pollen to dispose of than I know what to do with. While you are feasting you won't mind, will you, if I powder your back?"

"Of course not," said Apis Mellifica, filling her honey bags as fast as ever she could. "But you needn't mind powdering my back with pollen. I have a pollen basket with me and will carry away as much as you like."

"That is all right for you, my friend, but we have another object in having you carry away our pollen."

"What do you mean, Morning-Glory?"

"Why, little new bee, don't you know that every blossom that you visit this summer will wish you to carry pollen to some other blossom? That is the way we secure cross-fertilization, which Mother Nature told us centuries upon centuries ago was best for us."

"I don't know very much about cross-fertilization," answered Apis Mellifica, "but I know that we need pollen to assist in making certain parts of our honeycomb; so if you will let me fill my pollen bags for my own good I will gladly carry away some of it for your good."

"Agreed," said the Morning-Glory; "but see how the rain is pouring down. Lucky that you are well housed, little new bee."

"Dear me," said Apis, "your pollen has got in my eyes. I must comb them."

Whereupon little Apis set to work to comb her eyes; and with a fine comb, such as she carried with her, she did it nicely.

"You have an odd-looking face, Apis," said Morning-Glory.

Apis glared with all her eyes at Morning-Glory and thus began: "All honey bees have faces like mine; I see nothing strange about it. I am—"

"O, what have you done with your tongue," cried the Morning-Glory Pistil, who had been especially interested in the tongue that Apis had extended down into the nectar cup. "A second ago it was so long, and now—"

"What have I done with it?" cried Apis. "What *should* I do with it when I have finished my dinner? I have folded it away beneath my chin. If you had a tongue you would do the same, I suppose."

"I don't see it," persisted Pistil.

"Very likely you don't; for I have a nice sheath in which I keep it. Even when in use the sheath protects it; but when not in use the sheath covers it very nicely and folds up with it under my chin."

"You are an odd little bee," said Morning-Glory.

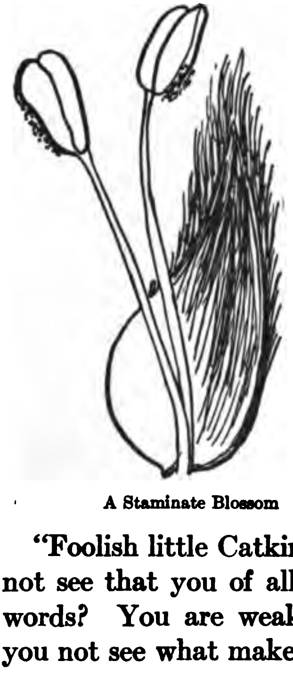
But just then the sun came out, and the little bee flew away to visit other blossoms, and to learn more of the cheery world in which it found itself.

WILLOW TREE BABIES

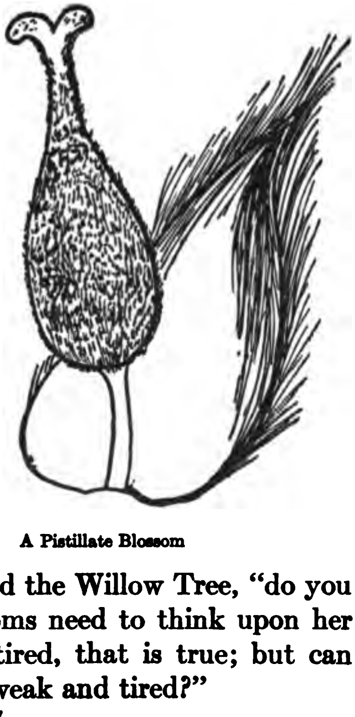
The Willow Tree catkins were swinging lazily in the sunlight. Their color was dull, and the tiny blossoms were few and far apart.

"Did you hear what Mother Nature said?" asked the Willow Tree of its catkins.

"Yes," answered the Catkins, "but we are too tired to think about it."



A Staminate Blossom



A Pistillate Blossom

"Foolish little Catkins," said the Willow Tree, "do you not see that you of all blossoms need to think upon her words? You are weak and tired, that is true; but can you not see what makes you weak and tired?"

"We and our pistils are very happy together," said the Stamens. "Why not let us alone?"

"That is just what the matter is, foolish little ones; you are happy together, but are too selfish to think of what is best for the Willow seed babies. If last year's blossoms had not been weak and tired, just as you are, yourselves would not be so weak and tired. Moreover, little Catkins—mark my words—next year your seed babies will be more tired than you are now; and so it will go on, year after year, each generation growing more and more weak and tired, until some time there will be no Willow Tree babies at all."

A Staminate Catkin

The catkins said never a word; but for days and days they hid their faces in their hoods and thought and thought. No one will ever know what they thought or what they whispered to each other; but as the years went on, and the springtime came and went, lo! there came a great change in the appearance of the catkins.

"How strange!" said the March Wind; "the Willow Trees are changing every year; they are like no willow trees that ever were in the years gone by; moreover, they are not like each other."

"Some of the trees bear very scraggly-looking tassels, and some soft and furry," said the Oak Tree, rattling its fine old leaves.

"Yes," answered the March Wind, "but I have already learned that the soft, furry tassels hold to the trees; I have to blow hard if I wish to scatter their tiny florets."

"I wonder why," murmured the Sun, as he sank to rest.

"I don't know," answered the March Wind, as he scurried across the plains; "I don't know-oo-oo-oo-oo!"

"I am so glad that the sun shines brightly," said the Mother Willow Tree blossoms one morning; and they began to dance and swing like the happy little catkins that they were.

"Why to-day?" asked the Sun, when he heard the Mother Willow Tree blossoms and saw how happy they were.

"Can't you guess?" whispered the blossoms. "Can't you guess?"

"Willow Tree babies ready?" asked the Sun, who had for days been sending his warm rays down into the baby cradles.

"Yes, that is it!" cried the Mother Willow Tree blossoms, dancing and swinging. "The Willow babies are ready! The Willow babies are ready!"

"And we are ready too," called the Father Catkins from a nearby tree. "We are ready, ready!"

"Here they come! here they come! here they come!" cried the Mother Trees.

"Buzz-zz-zz-zz! yes, we are coming, coming, coming! Buzz-zz-zz!"

"Welcome, welcome, little Andrena!" called the Willow Tree Fathers.

"Welcome, welcome, little Andrena!" called the Willow Tree Mothers.

"O, how good the nectar smells!" buzzed the little bees. "Ah, and how good it tastes!"

A Pistillate Catkin

"Dear me! what a noise," said a little ant, who had run up the tree, but who could get no nectar because of the stiff barbs that the Willow Tree Mother had placed among the blossoms. "Dear me, what a noise! And, see, there are swarms and swarms of Andrena people coming. I think I will run down the tree."

"Buzz-zz-zz-zz! yes, we are coming, we are coming, we are coming!"

"Now you know, dear Sun, why we are glad that you were shining this morning," said the Mother Catkins.

"Yes, I see, I see," said the Sun; and he filled the spring air with such warmth that some people thought summer had come; the Willow Tree blossoms knew better; they knew that the sun was shining just for them—for them and for the Andrena and for the Willow Tree babies.

Note.—The Andrena is the especial guest of the willow.

BIG BOMBUS

"HUM-MM-MM! Humm-mm-mm! Humm-mm-mm!"

"Here comes Bombus!" cried the Clover Blossoms; and they rocked to and fro until Bombus feared that a wind storm was sweeping over the clover field.

"Come, come, come!" sang the Clover Blossoms; and they sent out the sweetest invitations that ever were to the Big Bombus who was heading straight toward them.

"Humm-m-mm-mm! humm-mm-mm-mm! Good morning, Clover Blossoms!" hummed Big Bombus; and he settled upon one large head of clover. "Have you honey and pollen for me this morning?"

"Indeed we have—hosts of it," answered the Clovers. "And have you your furry coat on so that you can carry our pollen from blossom to blossom?"

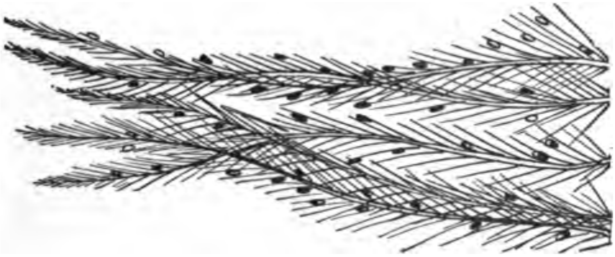
"Did you ever know me to forget my fur coat?" answered Bombus, thrusting his long tongue down into the blossoms, one after the other.

"A new little Apis Mellifica flew over our field just now; but she did not stop," said the Clover Head.

"I am glad," said Bombus, "for I want all the honey and all the pollen that you have. I have a nest to build, you know, in the grass, close to the ground. I am told that these little bees live in hives, and that they build honeycombs and store away honey. None of that for me! I prefer the cool ground and a nice little snarl of grass to hide beneath. There I lay my eggs; that is, after I have gathered enough pollen to lay them in, and there I like to live and see my eggs hatch out. Much better than living in a hive, I am sure."

"What do you do with our pollen, Bombus?" asked the Clover Blossoms.

"I carry it on my hairs from clover blossom to clover blossom for you, do I not?" said Bombus, pretending to be surprised that a Clover should ask such a question.



"O, of course, we know that you are our very best friend," said the Clover Blossoms; "and, indeed, we are most grateful that you carry away so much on your feet or on your fur; but what we would like to know is, since you do not build hives, what you do with the pollen that you carry away in your pockets or pollen bags?"

"O, well, I don't mind telling you, little Clover Blossom friends; especially since you prepare for me such delightful feasts. I use the pollen first to make cradles for my bee babies. I roll them into it and leave them to grow into baby bees. And then—well—the bee babies are hungry when they are born, you know, and so it happens that they eat their cradles, blankets and all; that is, they eat their pollen that I carry away in my pollen bags. You see, do you not, that I do not waste it?"

"Yes, we see," laughed the Clover Blossoms; and again the Bombus thought that a windstorm was coming across the clover field.

"The Apis," we have been told," continued the Clover Blossoms, "makes little cells, puts her bee babies into them, one in each, then seals them up."

"That is a good idea," said Bombus; "but my babies know how to seal themselves up; therefore I don't trouble to do it for them. My babies, as soon as I lay them in their pollen cradle, begin at once to spin a blanket for themselves; they wrap themselves in this, roll themselves up, and lie there until ready to come out full-fledged bees—asleep in their cocoons. You never saw one of my bee babies, did you, Clover Blossoms? They are very pretty; they are as white as snow and they have the prettiest pink eyes that ever baby had. You should see them in their cradles, with their tiny wings close to their sides and their tiny little legs and their tongues, curled up also close to their pretty white bodies.

"When they are born, that is, when they bite their way out through their cocoons, they wear little white jackets; but in three or four days these jackets turn a beautiful yellow just like the one I wear; and beautiful yellow stripes begin to appear, just like these I wear. Indeed, we consider that the Bombus is a very beautiful bee.

"But I must away, good friends; for you know I am a Queen Bombus and I have many eggs to lay before the summer is over; so good-by, Clover Blossoms. When my bee babies come to you later in the season be good to them; give them honey and see to it that they carry pollen for you to other clover blossoms. Good-by, Clover Blossoms, good-by!"

THE FRINGED GENTIAN

"Listen, sisters," said a bright-blue Gentian one sunny day. "I have been peeping out and I find that the world is very beautiful."

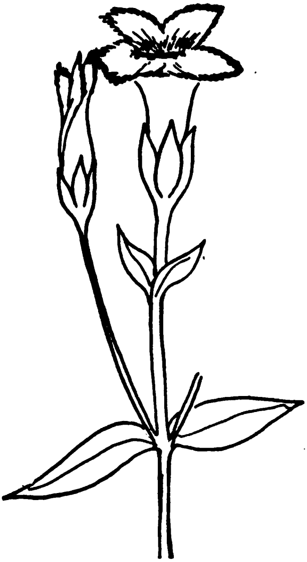
"Yes, so I have heard," said one of the sister Gentians; "but it is very unsafe to be out in the world I have also heard."

"How can anything so beautiful be unsafe?" said the first little Gentian.

"The world itself may be safe," said the second little Gentian, "but there are terrible creatures flying about in the air I have been told."

"I can't believe it," said the first little Gentian, taking another longing peep out into the sunshine.

"There are bees with fierce buzzes, and there are great, gaudy creatures called butterflies that run their tongues away down into the heart of one's blossoms. O, I have heard of this beautiful world many a time, but I have always preferred to keep my doors shut."



Open Gentian

"I love to hear the bees buzz," said the first little Gentian, lingeringly.

"And there are long-billed birds too that poke their bills down into one's very nectar cups and steal away the nectar," continued the second little Gentian.

"Why shouldn't we give the nectar to the bees and the birds and the butterflies?" said the first little Gentian. "For my part, I have often wondered what good it does us, for we never eat it ourselves."

"We make it, and that is reason enough why bees and their friends should not steal it from us," said the second little Gentian.

Closed Gentian

"Hear that silly little Gentian talk," said a big Bumblebee who had just flown down into the meadow. "Little she knows that we are her best friends."

"I am going to stick my bill down into her nectar cup just to teach her a lesson," said a long-billed bird.

"Your selfishness, little Gentian," said the Sun, "will do you more harm than will anything else. It is always the way." But the closed Gentian would not listen.

"I am going to open my doors just for to-day," said the first little Gentian. "Surely no harm can come to me just to-day."

So the first little Gentian opened wide her doors; and so beautifully did the blue of the sky reflect into her blossom that all the bees in the field came to admire.

Then a dainty little fringe formed itself upon the petals, and from that time on she was called the little fringed gentian.

The bees and the butterflies came; and sometimes the birds came; and each and all of them loved the little fringed gentian and brought pollen to her blossoms. She in turn gave honey to the kindly visitors until, in the course of seasons, the fringed gentian became one of the most beautiful blossoms in the world. Her dear little face is turned always toward the sky, and its blue is like the blue of the sky.

But the timid, selfish little Gentian, alas!—she remains just the same; her doors are closed, the sun never peeps in, and the blue of the sky reflects only dimly into the depths of her blossoms. Sometimes, in spite of herself, a bee will penetrate her nectar cup and accidentally leave a little pollen upon her pistils; but, for the most part, the closed gentian fertilizes her own blossoms, and, we know, self-fertilized blossoms are never so beautiful. And so the words of the Sun have come true; the little closed gentian has done itself more harm than anything else.

While its generous-hearted sister has opened wide her doors, letting in the sunshine, making friends with everybody, growing more and more beautiful every year, the little closed gentian has lived on in its darkness, unloved and unsought, remaining just the same year after year; and no one, not even the bees, would care very much if some day there should be not a closed gentian in all the earth.

NOTE.—Many kinds of gentians. The best loved are the open blue gentians. Petals fringed-deep, vaselike corolla—open only during the sunshine. Notice the boxlike calyx. The closed gentian never opens its blossoms, although long-tongued bees often force their way in and so effect cross-fertilization. The open "fringed gentian" grows one blossom at the end of a flower stalk; the closed gentian grows in bunches and low down, near the ground. The pretty pink sabbatia is also a gentian. Read Bryant's "Fringed Gentian." Especially do children like the verse next to the last.

AUTUMN STORIES

WHAT THE APPLE TREE SAID

"You think I am dead," the Apple Tree said,
"Because I have never a leaf to show,
Because I stoop and my branches droop,
And the dull-gray mosses over me grow.
But I'm all alive in trunk and root,
The buds of next Spring I fold away;
But I pity the grasses that grow at my foot."

"You think we are dead," the Grasses said,
"Because we have parted with stem and blade,
But under the ground we are safe and sound
With the snow's thick blanket over us laid.
We're all alive and ready to shoot
Should the Spring of the year come dancing here;
But we pity the flowers without branch or root."

"You think we are dead," the Flowers said,
"Because not a branch nor root we own;
We never have died, but close we hide
In the plumy seed that the wind has sown;
Patient we wait through the long winter hours;
You will see us again—we shall laugh at you then
Out of the eyes of a thousand flowers!"

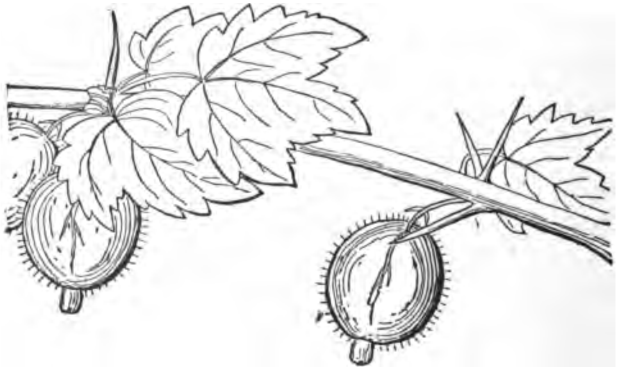
—*Author Unknown.*

WHEN THE NIGHTS GROW LONG

ONE by one the petals of the blossoms had faded away and had fallen into the soft, brown earth beneath. The nights were growing longer, the sun shone not so brightly, and the warmth which the blossoms loved grew every day less and less.

"Sleep, sleep, sleep!" whispered the breezes, as the leaves were beginning to fall.

"Sleep, sleep, sleep!" whispered the bushes and the grasses and sedges, each to the other.



"Coming, coming, coming," answered the blossoms. So the blossoms whispered their good-bys to the little seed babies, who were now quite large and were strong enough to take care of themselves and cuddle down for the long winter rest.

Autumn had come; the leaves were chasing up and down the roads looking for warm places beneath the walls and fences and close to the trunks of trees; the air had grown quite cold, and the sun was sending its yellow October light over hill and dale.

Soon hardly a flower was to be seen, but everywhere were red berries or odd-looking, hard-shelled seeds dancing on the stems.

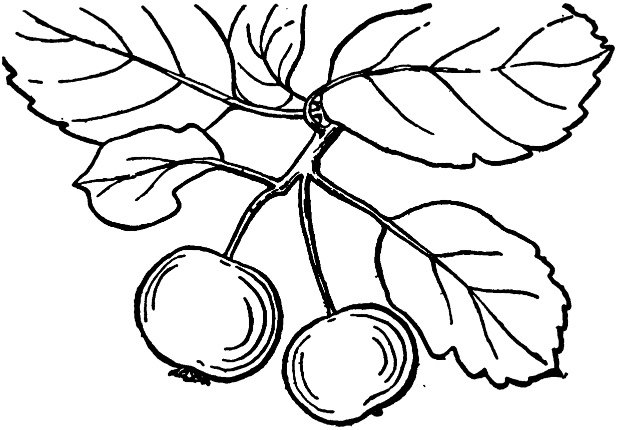
"What are you?" asked one of these hard-shelled seeds of one of the purple berries.

"I am a berry," answered the berry.

"And I am a seed," said the hard-shelled seed.

"I am a seed too," said the purple berry.

"You a seed? How can you be a seed? Seeds have hard, brown coverings."



"O, no, for you see that I have a beautiful purple covering. I am called a berry, but I am a seed with a purple covering. I am a berry and a seed."

"How can I believe that?" said the hard-shelled seed.

"You will grow wiser some time," laughed the little purple berry, and she danced happily in the October light.

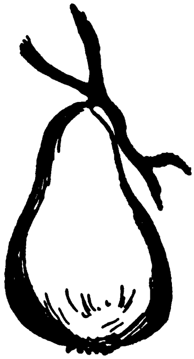
All day, and all the next day, the hard-shelled seed watched and watched. At last a bird came and alighted on the berry bush near the hard-shelled seed. The bird turned his head quickly, right and left, to be sure that all was well. Then, looking down at the little berry, the bird said, "Well, well, who would think that you are the same green little berry that I talked with earlier in the summer? And even in the springtime I saw you, cuddled down in your cradle and watched over by your Mother Pistil."

"Yes, I am that very same little seed and that same green berry. After Mother Pistil left us we little seeds set to work to grow and grow. Some seed babies, you know, build hard shells about themselves; but the seeds on this bush prefer to take on soft coverings."

"Fruit, the tall people who walk about call you," said the bird; "and I am very glad that you take on soft coverings, for I could not get at the hard-shelled seeds."

"And do these tall people that walk about know that what they call fruit is but the soft covering that some seeds choose for themselves?"

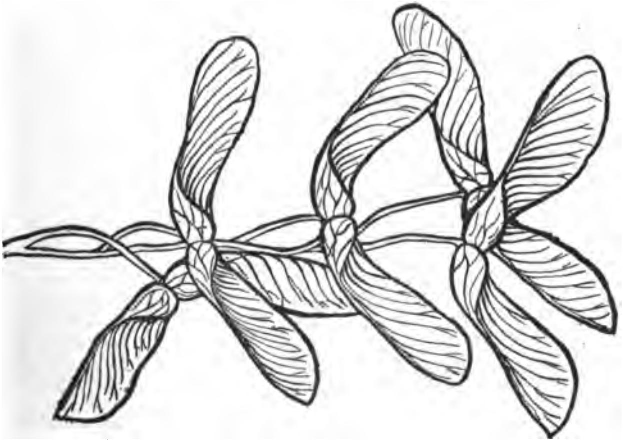
"Some of the wise ones know," answered the bird; "but there are tall people who see nothing except the very outside of things. Indeed, had I not watched you changing color from day to day I should hardly have recognized you myself. Now, there is the pear seed



baby; who would think that a pear is but a pear seed covered with a juicy, yellow covering? And the acorn—the oak seed baby—what a funny little cap he wears!"

Acorns

"Did you see the pine tree and the maple tree seed babies in the spring?" asked a little red berry. "I have heard that maple seed babies are odd little creatures."



Maple Seeds

"Yes, indeed, they are odd; they look like a little pair of tongs flying through the air."

"And have you ever seen the poppy seed babies—hidden away in a little box?"

Poppy

"Yes, and there are the milkweed seed babies. How they fly! One day the air was filled with them."

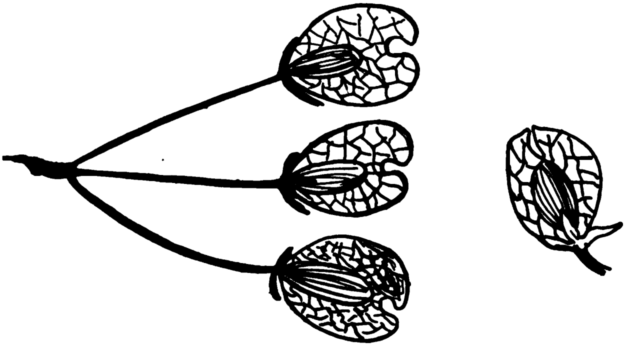
Milkweed

"Dandelion and clematis seed babies fly too, I have been told," added the little red berry.

Dandelion

Pine Cone

"Some seed babies live in a shell so hard that only a squirrel can crack it," said the bird. "But, little red berry, I must away; so what can I do for you before I go?



Elm

My time is very precious just now, for I am going to fly away from here—miles and miles and miles—to a country where the sun is warm, and the soft breezes blow all winter long."

"I would rather go to sleep," said the little red berry;

Partridge Berry

"I am glad that the winter is coming and that I may sleep, all cuddled down in the warm earth beneath the blanket of snow. So if you will please take a bite out of my soft pulp, so that I—the seed baby inside—may escape—I shall be very grateful."

"That is what the cherries said to me last spring," sang the bird. "I wonder if you will taste as nice as they tasted?"

"Taste and see! Take a big bite!"

"Ugh!" said the bird. "I don't like the taste of you." And away he flew to some other berry, the taste of which he would like better.

"Thank you, thank you," laughed the little red seed berry. "You have opened the door for me, and now I can escape and find a warm bed for myself in the soft earth just beneath my bush."

"I begin to understand," said the little hard-shelled seed baby to herself. "Yes, yes, I understand. We are all seed babies, each in a different kind of cradle; and we are all waiting for the same thing—a way to reach the soft, brown earth and plant ourselves. But who, I wonder, will set me free?"

"I will help you, I will help you," whispered the cool wind. And in another moment the little hard-shelled seed baby, cradle and all, found itself upon the soft, brown earth.

"O, what if a squirrel should find me and crack my hard shell and eat me?" And, sure enough, a squirrel did come that way, and the little hard-shell seed baby saw him crack many another nut that lay near by. This little seed baby, for some reason, the squirrel did not find; and so, little by little, the seed baby sank down into the ground and went to sleep.

Not a thing did she hear, and nothing did she know of the cold and the winds and the storms that swept over the earth, for kind Mother Nature spread a soft blanket over her which kept out both cold and sound and wind and storm.

One morning, after many weeks had passed, the little hard-shelled seed baby heard a call from the earth above. "Come, come, come," said a familiar voice. It was the voice of a friend, of that the little seed baby was sure, for, behold! the spring had come again; the trees were whispering their messages to the tiny seed babies at their feet, the warm sun was shining welcome, and all the earth was beautiful again.

So the little seed baby pushed up and up; its hard shell opened; and by and by a tiny sprout was seen peeping up through the damp, brown earth. The soft rains fell and the warm sun warmed her through and through. The little hard-shelled seed baby looked out across the earth. Yes, there stood the very same Juniper bush; and there the same bush that had borne purple berries; there were the same trees overhead.

And, best of all, the Juniper and the red berry bush and the trees all recognized the little hard-shelled seed baby and welcomed her back again into the warmth and the sunlight, so that for not one little moment was the little seed baby afraid or lonesome or frightened.

WHEN THE PLANTS GO TO SLEEP

"Ah, me," sighed a little new Birch Tree, "all the blossoms are going. Soon there will be nothing in all the world but snow. And—who knows?—perhaps there will never be any blossoms again; perhaps they will never come back."

"What a foolish little birch," said a tall Goldenrod, who was trying to keep its blossoms until the frost came. "The blossoms have faded away, to be sure; but before they floated down to earth you may be sure that they taught their seed babies a great many interesting things about themselves. Each father and mother said to their babies, 'We have taken care of you, dear little seed babies, all summer long; we have waited until you have grown large and strong; but the time has now come when we must go to sleep and when you must fly away to make new homes for yourselves.' "

"How do you know all this?" asked the new little Birch.

"Keep your leaves still and listen," answered the Goldenrod.

"How can I keep my leaves still?" asked the new little Birch.

"That is for you to find out," laughed the Goldenrod. "I have grown here at your feet all summer long and never yet have I known you to keep them still night or day."

"But my leaves love to dance in the sunlight," answered the new little Birch.

"I am not finding fault with you, little Birch," said the Goldenrod. "I am only saying that if you could keep still you could better hear the blossoms talk. You would have learned, then, that blossoms always come back in the spring, and that they will come back next spring as well."

The little Birch answered never a word. Somewhere it had heard that noisy and talkative people were usually foolish people; it must be then that the Goldenrod considered the birch a foolish little tree.

On the morrow it happened that the sun hid itself behind a cloud and the winds themselves went to sleep.

"It is very quiet everywhere just now," said the Birch to herself; "even my leaves are quiet; now is my time to listen, as the Goldenrod told me."

So the new little Birch listened, and this is what she heard the Goldenrod saying to her own little seed babies:

"You must cuddle down," said Goldenrod to her babies, "down, down in the soft earth and sleep the whole winter long. By and by, little ones, the spring will come again. You will be awakened by the singing of the pine needles and by the soft breath of the springtime winds. You will hear the song of the robin and of the bluebird, and you will know that it is time for you to peep up through the earth again just as, last spring, we, your mother blossoms, peeped up. The children will see you, and they will cry: 'O, here are the seed babies! They are beginning to grow into plants like those that were here last summer.' The children will welcome you gladly; the birds and the bees will come to you, even as they have come to us, your parents, during this long and beautiful summer. The great sun will shine down upon you; you will grow taller and taller, and by and by, in the late summer, bright blossoms will come to make beautiful the plant that you will have made ready for new blossoms and their seed babies. Then will your beauty and your sweetness attract the bees, who will gather your nectar and carry your pollen, just as they have done for us, your parents, throughout this glorious summer."

"But how can we fly away? How can we reach the warm earth? How can we cuddle down into the soft soil at our feet?"

"Wait, and Mother Nature will guide you," answered the Goldenrod.

So then Mother Nature whispered the secret to the Goldenrod seed babies, bidding them spread far and wide over field and hillside, over mountain and valley.

"A few of you may fall, if you must, at the feet of your parent plant," said Mother Nature; "but it is better for you to fly away; better for you and better for the world, which you may, if you will, make so beautiful with your gorgeous golden heads. So fly away, little seed babies, and let the fields be golden with your blossoms when another summer comes."

"But how are we to fly?" again asked the Goldenrod seed babies.

"I will teach you to fly," said Mother Nature. "Don't fear."

For Mother Nature never forgets her seed babies, no, not one, although she may have millions and millions of them.

"Our Pistil Mother told us that you would teach us," whispered the tiny seed babies.

"You were not old enough last spring to see the host of blossoms that made the birches beautiful, were you?" asked Mother Nature.

"No; we were hardly born then," answered the seed babies.

"Dear, dear me," laughed Mother Nature. "How quickly time passes! It seems but yesterday that the little birches were covered with pretty little catkins, and the air was sweet with their fragrance. But let me tell you about these birch tree seed babies, for in some plants the seed babies get ready to cuddle down into the earth very early in the season; some seed babies do not wait for the autumn to come. Well, one afternoon, when the ripe catkins with their seed babies were dancing in the sunlight, a blustering wind came rushing by.

"'I'm out for a frolic, little Birches,' said the Wind. 'So look out! I may like to pull you up by the roots as I did an old oak last night.'

"'Frolic as much as you please,' said the little Birches by the riverside. 'The more you frolic the better we shall like it. We are not afraid!'

'Not afraid!' screamed the blustering Wind. 'Not afraid! We shall see!' And the wind ran to the top of the hill, took a long breath, then came rushing down again, straight upon the little birches by the riverside.

"'Here it comes!' whispered the Birches; and they bent low and let the wind pass over them.

"'There!' cried the Wind. 'See how easy it was for me to bear you down to the earth and break you.'

"But when the wind had turned its back up came the little birches as straight and as happy as ever.

" 'What!' screamed the blustering Wind, again. And once more it bore down upon the little birches, this time with all its might.

"But again the birches bent low, and then, as before, they sprang back into their places, as straight and as happy as ever.

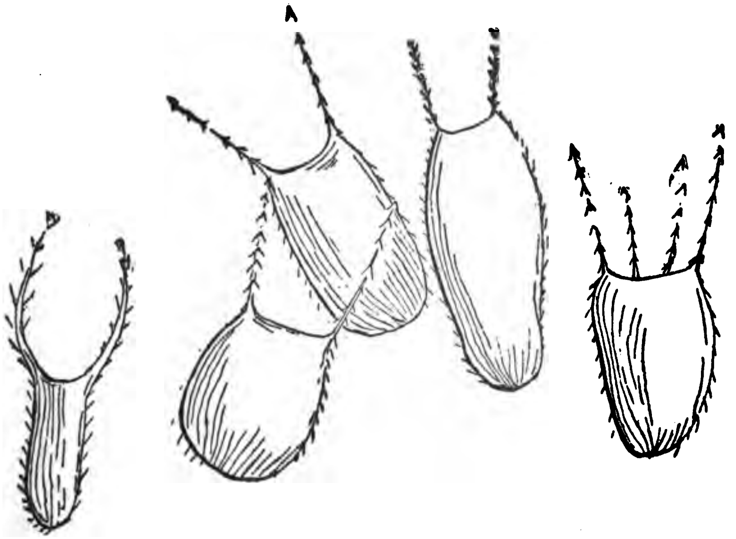
" 'That is very strange,' whispered the Wind to itself. 'Can it be that those little birches are stronger than the oak that I uprooted, and stronger even than I?' Then, with a loud whistle, the wind pranced off across the fields in search of other trees to play with and other branches to bend.

"And when the wind was gone the birches nearly bent double laughing among themselves, for the wind had scattered their seeds every one—and that was just what they wished the wind to do! The ground was covered with catkins, and you may be sure it was not many days before each seed baby had sunk down into the warm, spring earth and was sound asleep, for some seed babies have to sleep all summer and all winter before they are able to spring up and grow into plants like those from which they themselves were born."

THE BEGGAR–TICKS

"ONLY a weed!" said the children, passing along the roadside.

"Only weeds, indeed!" said one Beggar-Tick, whose wonderful bee trap was pointing straight toward the children. "I can't understand the stupidity of these children who go daily up and down the road and never once see the wonderful things that Mother Nature has prepared for us, weeds and all. Only a Beggar-Tick, indeed! Only a weed!"



"Don't get excited, dear little Ticks," said Mother Nature, calmly. "Don't shake your heads so furiously or you will shake out your pollen before the bees have come."

"But those stupid little children!" answered the indignant little Beggar-Tick. "Why don't they stop and look at our funny little bee traps? Why, those children couldn't catch a bee if they tried all day long!"

"They wouldn't try," said Mother Nature; "they would run and scream if one alighted near them."

"How stupid!" said the little Beggar-Tick.

"No, not stupid, little Beggar-Tick; not stupid, only different. You know certain things, little Beggar-Tick, and they know certain other things; the trouble is you don't understand each other."

"It may be so," said the little Beggar-Tick; "but I am tired of being called only a weed, when, in reality, I have one of the finest bee-catching arrangements in the whole world of blossoms."

Just then a bee came along and the Beggar-Tick forgot her troubles. Her cluster of leaves began to spread themselves, her flowers nodded to welcome the bee, and the whole plant danced with joy as if the bee were an old friend.

"There would never have been any seed babies had the bee not befriended us," whispered the Beggar-Tick blossoms to each other

"Get yourselves ready to shoot!" whispered Mother Nature; "quick! quick!"

The Beggar-Tick blossoms began to take notice. The Stigma of the pistil stretched up her head toward the bee and asked, "Have you any pollen on your legs and on your back for me?"

The bee buzzed around the Beggar-Tick plant for a moment or two, but he would not enter the blossoms. "These have no honey," said the bee, "I may as well go farther."

"O, that was only a honeybee," said the Beggar-Tick. "We don't care for honeybees; we have no honey."

Just then another bee came near. "There," whispered the blossoms to each other; "let us be ready, for I am sure this is a pollen-gathering bee."

The bee buzzed louder and louder as he drew near; then, without as much as "By your leave!" he dashed straight into the tiptop flower of the plant

"Whither so fast?" asked the Stigma, reaching up her head for pollen.

But before the bee could answer, snap went the Beggar-Tick trap, and the stamens, which until now had been crowded close together and imprisoned by the overlapping petals, flew apart and away flew the yellow pollen dust straight into the bee's face.

"You are not very polite," said the bee, winking the pollen out of his eyes and sneezing a bee sneeze.

But the Beggar-Tick said never a word; the bee was covered with pollen and so was the stigma, therefore the future of the baby Beggars was assured; what did she care?

"I wonder where he will carry our pollen?" said the Stamens, as they watched the bee fly away. "There, see! he has alighted on that tall Beggar-Tick near the tree. He must like Beggar-Ticks. Let's watch and see if these Beggar-Tick's blossoms shoot at him, as we did. Yes, yes! There is a cloud of yellow dust! And now the bee is coming out of the flowers covered again with pollen."

"Halloo!" called the first Beggar-Tick to the one near the tree.

"Halloo!" answered the Beggar-Tick near the tree.

Then the flowers of both waved and nodded to each other; which meant: "Our seed babies are all right, all right; thank you, Bee. Thank you, Mother Nature. Now we will go to sleep; Mother Nature will get our babies ready for autumn."

The warm summer days had passed; the yellow October warmth lay upon the woods, the fields, the hillsides. The Beggar-Tick flowers had gone to sleep; even the leaves looked sleepy; but on the stalks danced little pods, inside of which lay Beggar-Tick babies sound asleep.

"It is well, Beggar-Tick, that you learned to put hooks on your seed babies' cradles; otherwise your seed might not scatter very well."

"Yes," said Beggar-Tick; "no children gather my blossoms because they are not beautiful; the wind doesn't help me so very much; but you should see my babies cling to every sheep and dog, to every skirt, to every coat that comes our way. And that reminds me, Mother Nature, of visitors we had last autumn—Alice and her little terrier, Bowser. Bowser was a most aristocratic little terrier. If his young mistress disliked anything, Bowser disliked it too, and up went his nose higher than ever. Bowser and his little mistress, Alice, often roamed the fields together. Alice loved to gather flowers, and once she made a wreath of daisies for Bowser's neck. The flowers knew that Alice loved them, and whenever she came they danced for joy; they knew that they should be carried away in her hands, and that was just what they wished.

" 'Take us,' pleaded the Spanish Needles one day.

" 'And us,' begged the Bur Marigolds.

" 'And us,' echoed the Agrimony

"But Alice would not listen. 'Weeds!' said she, scornfully; 'you are only weeds.'

" 'Sniff,' went Bowser, 'sniff'—which meant, 'Weeds, only weeds!' For he saw that Alice did not like weeds. Therefore Bowser treated the weeds with great scorn. He would give a scornful sniff whenever he brushed against them, and sometimes he took the trouble to brush hard against them just to break their stalks.

"One breezy autumn day Alice and Bowser were walking about this very field. Alice was looking for seed cradles, and already she had an apron full of them.

" 'She will never gather us,' sighed my Beggar-Tick babies.

" 'Never mind,' said I, 'there comes that silly little dog, Bowser.' And as the terrier brushed past I whispered, eagerly: 'Stick to his hair, stick to his hair.' The seed pods began to dance with glee; and Bowser, who saw that the Beggar-Ticks were waving at him, with an angry bark leaped into the very midst of them.

" 'Yip, yip,' Bowser cried, for one of my pods stuck its little horns into his nose.

"Bowser gave his head a good shake, trying to throw off that Beggar-Tick pod; but the more he shook the more my Beggar-Tick babies stuck. The more he frisked around the more they showered down upon his back.

" 'Mean weeds!' sniffed Bowser, and he ran to Alice for help.

" 'Why, Bowser,' Alice cried, 'you are covered with those funny old weed pods!'

"Alice tried to pull them off, but we Beggar-Ticks know how to stick!

" 'Let us wait until we get home, Bowser,' said Alice. Then both turned and ran out to the roadside.

"My Beggar-Tick babies could hardly contain themselves, they were so delighted. 'Did you ever hope for such luck?' they whispered to each other. 'That foolish-faced dog will scatter us along the entire roadside and carry us into the very house. Such luck! such luck! O, there will be Beggar-Ticks along the roadside next summer! Plenty, plenty of them!' And they clung and clung until Alice reached home.

"Then what do you think the foolish child did? She sat down on the doorstep, picked off every one of my Beggar-Tick babies from Bowser, and—O, joy!—and then she threw them everyone upon the ground.

" 'Ah, but there will be a fine crop of Beggar-Ticks around this house next summer,' my babies whispered. Then they settled down upon the lawn, and I have often wished that I might see that lawn now. It must be filled with Beggar-Ticks."

"Yes, it *is* filled with Beggar-Ticks," whispered a little Dandelion Plume seed that came floating down.

"How do you know?" asked the Beggar-Tick plant. "Are you sure?"

"O, yes, very sure. I lived on the lawn myself, and I know."

"Tell me about it!" cried the Beggar-Tick.

"I would, but I am so—sl—sleepy. I'll—tell—you—about—it—next—" But the little Dandelion Plume seed never finished, but cuddled down beneath the Beggar-Tick plant, and fell fast asleep.

NOTE.—The beggar-tick has a poor little blossom, of no particular color; it hasn't yet learned to make itself beautiful. Meantime it does the best it can by arranging sure ways of disseminating its seeds. The beggar-tick blossoms grow in a head like any other composite. At the end of each little blossom is a little seed pod with little hooks upon it that help it to cling to anybody and everything that comes its way. These little seed pods stand on a cushion, much as the dandelion seeds stand, but they have no plumes. They preferred to evolve little horns instead. These little seed pods do not blow away, but they catch easily to anything that comes within reach, and so find a way to travel about in search of new homes. Some beggar-ticks, Spanish needles, have not been contented with two horns, and have grown four. Plants like these are usually found in dense thickets, and they seem to realize that they must do something very effective in order to secure traveling facilities for their seed babies, for, as in the case of the dandelion, growing so close to the ground, the wind can help them but little.

THE OXALIS SEED BABIES

SUCH a sensitive little plant is the oxalis! If a child but touches its leaves they fold together as if to say, "Don't touch us; see us try to protect each other."

By the roadside one autumn day stood two little oxalis plants, looking for all the world as if they couldn't keep their eyes open another minute.

Just then two little children came down the road.

There were flowers in their hands, and the little oxalis plants wished they too had some flowers for the children. It was too late for blossoms, however, and the little oxalis plants turned away to go to sleep.

"O, see, see!" cried one of the children, "here are candles." And the child stooped down and gathered the little seed-cradles that looked, indeed, so like candles.

"Let us carry the candles home!" cried one little girl. "We will play house with them; we will play that they light the house," she said.

The little oxalis plants began to wake up. "O ho!" they said to themselves. "Here is a chance to send our seed babies off in search of new homes. Keep very quiet, babies, very quiet, until the children are far down the road. Then, when they are not thinking, one by one, pop! pop! pop!" and the seed babies laughed to think what a good joke this would be.

The children gathered a handful of tiny candles and hurried on down the road. Soon they were so busy talking that they forgot all about the candles.

"Now is our time," whispered the Oxalis babies. Pop! pop! pop!—and away flew the seed babies

"Let's light our candles and play house now," said one little girl.

"O, yes," said the other little girl, gleefully; but she stopped suddenly and stared at the oxalis plants; for not a candle was left!

"Why, what has happened?" cried both children together.

"We could tell you," whispered the Oxalis leaves to each other; and they turned their faces away to keep from laughing.

Then the children threw the little branches down by the roadside and walked on. "What odd plants!" they said.

"O, we were so glad at last to be allowed to lie down and rest," the Oxalis plants sighed. "We couldn't have kept awake another minute. And to think that our seed babies, have, every one, found new homes for themselves. The season was growing so late that we had begun to fear that our seed babies would have to drop into the earth at our roots and grow up in the very same place; and that is not good at all for seed babies."

NOTE.—Three little leaflets which fold their hands together when darkness falls. Some of the blossoms are fertilized by tiny bees and flies; some never open but are self-fertilized (*cleis-to-gam-ic*). Their little seed pods look like candles, and are called candles by the children.

TOUCH-ME-NOT SEED BABIES

DOWN by the brook lived a little yellow-flowered plant. Nobody could describe the flower, for it was most strangely planned.

"We like to be strange," said the little yellow-flowered plant to its neighbor; "and by and by we shall have seed cradles even stranger than our blossoms."

"I don't think anything could be stranger than your blossom," answered the neighbor.

"Wait and see!" laughed the yellow-flowered plant; "wait and see."

So the neighbor and all the neighbors waited. At last, when the nights were cool and there was a yellow haze in the air, the seed cradles were ready. They were long and thin and pointed. "I don't see anything strange about your seed cradles," said the neighbors. "We have seen many seed cradles that look much like yours."

"Wait and hear! Wait and hear!" laughed the yellow-flowered plants.

"How strange!" said the neighbors; "these plants expect their babies to talk. We have been taught that flowers are seen and not heard."

The days passed by, and the nights grew cooler, but the neighbors heard nothing from the seed babies.

"Wait until our pods are yellow and our seeds are ripe," said the yellow-blossomed plants, "then perhaps you will hear something." And that was all they would say.

"Let us lean close to these pods and listen," said a twig of Alder one day. So the twigs leaned over close to the pod. Not a sound did they hear. They leaned closer. Their heads touched the pod. Then—pop! pop! pop! Open came the pods and away flew the seed babies.

"Well! well!" gasped the Alders. "You nearly frightened us to death, with your pop! pop! pop!"

Then the divisions of the pod curled back, and made, indeed, the strangest-looking seed cradles.

"You should be called Touch-Me-Not!" said the Alder twig.

"A most fitting name," laughed an Alder on the other side of the brook; "but, pray, how did you learn to shoot like that? For see, here are some of your seed babies away over here—at our feet."

"Mother Nature taught us," laughed the Touch-Me-

Nots. "We shall amuse ourselves by shooting all the fall. O, it is great fun."

"Odd little plants," whispered one of the Alders. "I am glad we don't have to shoot; it is much easier to keep still and allow the wind to take care of our seed babies."

"Yes, indeed," nodded the other Alders; and then they began to prepare to go to sleep for the winter.

The babies in the other Touch-Me-Not pods heard all that was said; and they laughed to think that by and by a day would come when they too might pop out of their cradles and fly away.

Such a frolic as they all had by themselves, in their snug little cradles. The whole plant rocked to and fro with their glee.

"Our babies make no such noise!" said a tall Cat Tail. "Why are not your babies quiet and stately as our babies are?"

"What a jolly family!" said Mother Nature, who happened to be passing along the brook; and, just for fun, she tapped on the door of a yellow Touch-Me-Not cradle. Pop! pop! pop! The door opened in a second and out jumped a Touch-Me-Not seed. Pop! pop! pop! and out rolled another. "O, what a nice, warm earth this is!" they laughed. "Let us go to sleep."

And, indeed, the Touch-Me-Not children had played so hard that they were glad indeed to cuddle down and go to sleep.

NOTE.—Two small lateral petals, one saclike. Only long-tongued bees can reach down to the nectar sac or get the pollen from the short stamens. The stamens ripen before the pistil, thereby depending upon cross-fertilization. Humming birds sometimes push their long bills down into the sac. Also certain butterflies visit the blossoms. An odd little pod which, when dry, shoots the seeds quite a little distance.

THE SQUIRTING CUCUMBER

Once upon a time there lived in Europe an odd little plant which is called squirting cucumber. It was not pretty, and nobody seemed to gather its blossoms.

The cucumber plant, however, loved her seed babies, even if they were not pretty, and she was anxious that they should scatter over the earth.

"No one seems to gather my blossoms," said the plant, "therefore I *must* make them gather my seed pods."

"How are you going to do it?" asked the grasses at her feet.

"Wait and see," said the Squirting Cucumber.

For days and days the cucumber was very busy. She worked from sunrise to sunset, until at last her cradles were full of seeds. The seed cradles or pods grew larger and larger and the bristles upon them grew sharper and sharper and sharper.

"Are you not afraid that your bristles will keep people away from your pods?" asked the grasses.

"Wait and see," was all the Cucumber would say.

It was now Indian summer, and many people were traveling up and down the country. "What a strange plant!" said a lady, looking at the cucumber. "See, the pods are like little cucumbers," and she stooped to examine them.

"Now is my time," thought the Cucumber Mother. She waited until the lady's head was close to the pods. Then—"Ss-ss-ss-ss!"—and the plant had squirted its seed babies out of the pod. They flew into the lady's hair, and into the lace on her hat; they flew into her face.

"Ugh!" said she. "What a nasty plant!"

The plant shook with laughter. "Now, my seed babies will have a chance to travel," she said to herself. "Not only have I shot them into the lady's hat, but they have a sticky glue, by which they will be able to stick in that pretty lace long after the lady goes away. Ho, ho! ho, ho!"

"This is the oddest plant," said the lady. "Let us carry one of these pods home with us." But as she touched the pods—"Pop! pop! Ss-ss!" and away flew more seeds. "Pop! pop! Ss-ss!" until the lady's gown was covered with them. "Of all the plants," said she, "this is the oddest!" The lady gathered several pods and put them away in her traveling bag. "I hope they will not pop open until I reach home," she said.

The seed babies, however, thought the chance too good to be lost. So their pods popped open, every one. And when the lady reached home there the seed babies were, out of their pods and sticking fast to everything in the bag.

The lady tried to shake them out, but the glue was very sticky and she did not see that a great many of them remained in the bag. When she reached America she told her friends the story of the strange European plant.

"I wish you could have seen it," said she.

"Wait a little, and you *shall* see it," whispered the two little seed babies who were still hidden in the laces of her hat. "We shall drop from this lace some day, and then—and then—"

And, sure enough, when the next spring came, behold! the squirting cucumber plants were growing here and there around the lady's home.

"It is very strange," the lady said; "they never grew on my lawn before."

"You must have brought home some seeds," said the gardener.

"I don't think so," said the lady, "for when I found that every pod had opened I threw them all away."

"Not all! not all!" laughed the little Cucumber plants.

And as the years went on the squirting cucumber plants sprang up everywhere for miles around.

"It is the strangest thing," said the lady.

"Not at all strange!" laughed the seed babies. "We know! We know!"

CAT-TAIL SEED BABIES

"Dear me," said the Arrowheads. "What has happened to the Cat-Tails? Look at them! They are all fuzzy and frouzy."

"They are falling to pieces," said a Pond Lily, who was more beautiful than wise.

"They are growing careless and neglectful," said a sleek, smooth Bulrush.

"Well, did you hear that?" laughed the Cat-Tails; and they rustled until the frogs began to croak, thinking that a storm was brewing. "Careless and neglectful! Well!

well! What do you think about it, Mother Blossoms? And what do you think about it, Father Blossoms?"

"We think the Lily and the Rushes and the Arrowheads are very stupid," said the Mother Blossoms.

"They would better examine what we are doing before they call us fuzzy and frouzy."

"Well, what *are* you doing?" asked the Rushes, who had stopped their rustling long enough to listen

"Find out," snapped the Father Blossoms; and down came a shower of pollen, some of it falling upon the rushes.

"I can't see with my eyes full of pollen," said the Rushes, "but I think I can suspect."

"Dear me, where does the brown pollen come from?" cried the Water Lily. "It will get mixed with my yellow pollen."

"Don't be afraid of it," said the Cat-Tails; and down came another cloud of pollen.

"Thank you, Father Blossoms," said the Mother Blossoms. "We think that will do; we have more now than our seed babies need."

"Very well," said the Father Blossoms; whereupon they began to go to sleep; the tiny florets drooped away, and before many days the Cat-Tails were even and smooth again.

"Now, that is very strange," said the Lily.

"Not strange to me," said the Pickerel Weed. "I too have spikes of blossoms. Have you never noticed that some of the blossoms on my spikes are purple, some not?"

"Yes," said the Lily; "we know that some of your blossoms are Mother Blossoms, some Father Blossoms."

"And you know, do you not, that on spiked blossoms the Father Blossoms shake their pollen down upon the Mother Blossoms?"

"Certainly," said the Water Lily

"Very well, it is the same with the Cat-Tails. Look and see."

"To-morrow," said the Water Lily, "to-morrow; for the sun is sinking now, and I must close my doors and go to sleep."

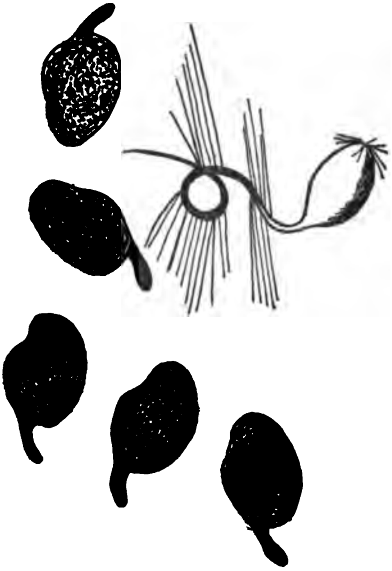
Whether the Water Lily really understood, the Pickerel Weed never knew, for the water lily never opened her doors again; but one day some children came again, and, finding the Cat-Tails smooth and new, gathered a few and carried them home. "Strange that these Cat-Tails should sometimes be so rough and fuzzy and frouzy," said the children. And as the Cat-Tails stood in the fireplace, and were admired by the people who came to visit, they said to themselves more than once, "One can excuse the Water Lily and the Arrowhead and the Rushes, but we cannot understand how bright-eyed boys and girls can be so blind! To think that the children never once thought to examine us and see why we were once so 'rough and fuzzy and frouzy.' Ah, well; never mind, our seed babies knew; and they have grown into fine, tall plants by now."

Note.—Cat-tails grow in marshes—separate father and mother blossoms on each plant—no petals, no flower cup, not dependent upon insects, father blossoms above, mother blossoms below on the "tail." The red-brown which the children call the cat-tail, is the compact down of the mother blossoms. The difference between the father and mother blossoms is not noticeable until late in summer when the pollen is ripe. Then the cat-tail looks ragged and disheveled.

THE CRANESBILL BABIES

"I don't see," said Mother Thistle, "how your babies are ever going to find a way to plant themselves, for they cannot fly as my babies."

"Nor have they wheels of white plume as mine have," said the Milkweed.



"Don't worry yourselves, kind neighbors," said the Cranesbill, laughingly. "My babies are quite able to take care of themselves. Indeed, they can do some things that your babies cannot do—they are able to make their own beds."

"Make their own beds!" cried the Thistle.

"Wonderful, indeed!" cried the Milkweed.

"There!" cried the Cranesbill Mother, excitedly. "There goes one of my babies now—see, see, right at your feet. Watch and see it make its own bed and get into it too."

The Thistle watched, and, sure enough, little by little the Cranesbill plume curled up like a corkscrew. As it curled it pushed and pushed until the seed went into the ground.

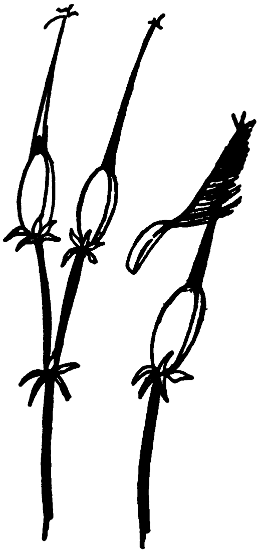
By and by the plume straightened itself out again. Just for fun, a breeze ran beneath the plume, as it lay upon the ground, and tried to lift it into the air once more.

"No, indeed," cried the little seed baby. "I do not wish to fly again. I am sleepy and wish to remain in the warm soil just where I am."

Again the breeze tried to lift the seed baby, but in vain.

"It is useless for you to try," said the seed baby. "Do you not see that I have set my bristles into the earth, and that if you lift me you will have to lift the earth too?"

"How wonderful!" said the Thistle. "Mrs. Cranesbill, your babies are certainly the wisest babies I ever saw."



"Perhaps not wisest, Friend Thistle, but wise enough to take care of themselves; of that I am sure," said the Cranesbill Mother, proudly.

NOTE.—Hairy stem and hairy calyx about the blossom. The anthers ripen and fall away before the pistil is ripe, thereby preventing self-fertilization. Odd little seed pods, having a plume and a peculiar way of burrowing themselves into the ground.

THE SAD LITTLE FLAX

THE dear little Flax blossom, like a bit of heaven's own blue, had faded away; her seed babies were safely protected in a snug little cradle, and the blossom had looked down upon them for the last time before saying good-by and settling down in the soft earth to sleep.

For a long time the seed babies lay in their tiny cradles half asleep and half awake, listening to the song birds and enjoying the soft breezes that swayed their cradles back and forth.

"To think," said they, "that some time we too shall be flax plants, and shall borrow the blue of the sky to color our blossoms." But one day they began to fret. They had watched the seeds of other plants and had seen some of them flying through the air like birds, some of them clinging to the coats of the animals that passed through the fields and down the roadside. They had even laughed to see Balsam shoot her baby seeds off into the air; and once a Geranium had explained to them how nicely her babies could burrow into the soil.

All this was very interesting; but one day the little flax seeds began to notice they had neither plumes nor horns nor, as far as they could see, would they know how to burrow even if they ever reached the ground. Then the little seeds began to complain; they began to think that their mother had not provided for them; that they had no means of helping themselves.

"Wait, little Flax Seeds, for the rain!" whispered the old Flax plant, now almost ready to go to sleep, but not forgetful even in her sleep of her seed babies. "Wait for the rain! Wait for the rain!"

"What does she mean?" said the little Flax Seeds. But the Flax plant was too sleepy to repeat.

"O, little birds," cried the Flax Seeds, "take us with you, for our mother has provided no way for us to travel."

"Wait for the rain! Wait for the rain! Wait for the rain!" sang the birds.

"O, Wind, help us," cried the sad little Flax Seeds. "Take us with you. Scatter us afield, for we have no way of traveling."

"Wait for the rain! Wait for the rain!" whistled the Wind, and away he flew down the hills and far away.

"O, Sheep, help us," cried the little Flax Seeds. "Take us as you take the Beggar-Ticks, for we have no way to travel."

"Wait for the rain! Wait for the rain!" bleated the sheep, and they went on nibbling the scant grasses at their feet.

"What will become of us?" the little Flax Seeds said. "We are so tiny, and no one will help us."

"Wait for the rain! Wait for the rain!" whispered the trees overhead; and at last the sad little Flax Seeds went to sleep to the soft music of the trees, who sighed softly through the long night, "Wait for the rain! Wait for the rain!"

In the night a few raindrops fell—patter, patter—only a few. Patter, patter, and now a few more, each one dropping softly upon the flax seed cradles.

"Are you there, little Flax Seeds?" asked the Rain.

"Yes, yes, we are here. Have you come to help us, Rain?"

"Yes, I have come to help you. Open your windows, open wide; we would grieve if the hillsides were not covered next summer with little blue flax blossoms. So come, little seeds, open wide your doors and let us in."

Then the little seeds reached up out of their cradles and bathed themselves in the cool raindrops. "How good it feels!" they said.

In the morning the rain went away; and the little seeds still looked out upon the earth and saw the seeds flying in every direction, while for them, as they thought, there was no way of escape.

Soon a soft breeze came sweeping by. "Are you ready, little Flax Seeds?" asked the Breeze. "Has the rain come yet?"

"Yes, the rain came, but did not help us," sighed the little Flax Seeds.

"O, my dear little Seeds, you do not know what you are saying! Come with me, I will show you." So then the wind gathered up the little seed babies and carried them to the roadside. "Now will you find your homes," said the Wind, and passed on down the road.

"What does the Wind mean?" asked the little seeds. "Are we to remain here and die?"

Just then the sheep came along. "Ah, now you are ready!" said the sheep. "Come with me."

And soon the birds came. And they said: "Ah, now you are ready. Come with me." So the sheep gathered up some of the seeds and the birds gathered up the rest; and the strangest thing happened—the little seeds found that they could stick as closely to the sheep's wool and to the bird's feathers as any little Beggar-Tick that ever was. They did it all by their own moisture—their own sticky moisture. "Ah, the rain helped us! We see, we see!" And away flew the happy little seeds, up and down and everywhere; and when the next summer came, behold! the roadside was blue as the sky with little flax blossoms.

NOTE.—A beautiful sky-blue, tiny flower. The petals remain rolled up until ready to blossom out in full. The seed device is a sticky secretion which is particularly noticeable when dampened. The plant secures the scattering of its seeds by sticking to surfaces during damp weather.

THE DISOBEDIENT FLY CHILDREN

"LITTLE Flylets," said Mother Fly, "each one of you is safe within your cradles; you have but to sleep and grow, and in due time you will come out of your blankets as fine flies as ever flew through the summer air and feasted upon the blossoms of the bogs.

"But listen to what I have to tell you, for by the time you are born into the world, and are real flies, I shall be far, far away.

"When you creep out, as you will some day, into the sunlight, you will find yourself in a world of plant life. You will see blossoms everywhere. Different blossoms have different fragrance; some flying creatures like the rose, some like the apple blossoms, but I, and you will be like me, I like best the jack-in-the-pulpit and the skunk cabbage and the pitcher plant. There is another plant that I like too, but I have learned that it is a monster of a plant; it will eat you if it catches you. Now, I want to tell you about this plant before I go away and leave you. Are you listening, fly babies? Do you hear what I say?"

"We hear," answered the babies, sleepily.

"Well, this plant is very pretty to look at. It shines in the sun; and sunshine, you will find, attracts flies always. The blossoms have an odor that flies like, and so it happens that many flies fly straight into a trap that this plant spreads for us. I have been nearly caught in it many a time; but thus far I have escaped.

"This plant has a pretty name too. It is called sundew, because the drops of sticky paste that it spreads upon its leaves look like dew. Now, these leaves are close to the ground, and that makes the drops look all the more like dew. But be warned, little flies-to-be, and keep away from that plant, for, as I have said, it will eat you. A bird flying through the air is not more dangerous to a fly than this plant."

Then the mother fly went away; and the little flies slept on. At last there came a day when they crawled out into the world; and it was as their mother had told them—a world of plant life. They stretched their little feelers; they wriggled their tiny little noses, and something bade them fly straight toward a funny pitcherlike-looking plant, where half of the swarm was drowned in less time than it takes to tell it.

"We smell another blossom," said the few flies that were left; and away they flew straight into the throat of a jack-in-the-pulpit; and there they are to this day perhaps, for they soon found that they were imprisoned.

A few of the swarm, however, had alighted only on the top of the blossom's spathe and were walking along the edges when they heard a call for help.

They turned their thousand eyes down upon their unfortunate brothers and saw at a glance that they could not help them.

"What a terrible world this is!" buzzed one little new fly.

"It begins to come back to me," said another little new fly, "that our mother warned us against certain plants when she put us into our cradles and went away and left us."

"Yes," said another little new fly. "Some memory comes back to me too. What was it she said—something about a plant with dewdrops upon it?"

"Yes, she said that the plant would eat us."

"We have already learned that one will drown us, and that another will imprison us," said yet another little new fly; "but think of finding a plant that will eat us."

Then the swarm—what was left of it—flew out into the sunlight and forgot all about the pitcher plant, jack-in-the-pulpit and all. For hours they flew about in the warm sun, many a time escaping only by the narrowest chance the open mouth of a bird or the sticky juices of certain plants.

At last, tired with flying, they settled down near the earth in a place that was nice and boggy, just suited to their tastes.

They rested for a time, washing their faces and combing themselves with their hind legs, as flies have always done since time was. At last one of them said: "Why, here are some drops of dew! So late in the day too! Let us sip."

And, since the little new flies were thirsty, they flew straight down upon the dewdrops. But alas, alas! they had fallen into the very trap that their mother had warned them against; for slowly the leaves began to curl up—slowly, slowly; and the sun began to hide its face; the dewdrops stuck fast to their tiny feet, and in a moment all was dark; the leaf had folded itself over the flies and had closed its edges tightly about them.

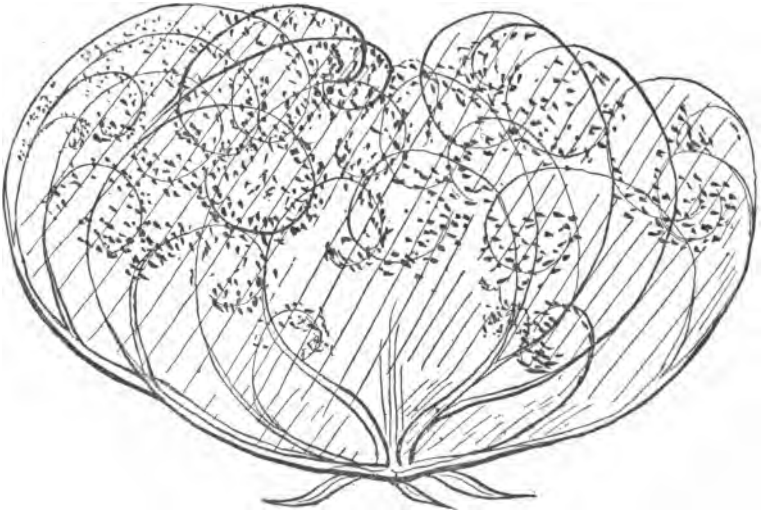
And then, then—well, no one knows exactly how it came about, but when, some hours later, the leaves slowly unfurled themselves, not a sign was there of a little new fly. For this was indeed the sundew plant that eats little flies—legs, wings, and all

NOTE.—1. The pitchers are leaves, not blossoms. This plant attracts and eats—absorbs flies. Notice the meatlike appearance of the leaves; such always attract and eat animal food—flies. The blossom grows upon a tall stalk above the leaves. The pistil is like a five-ribbed parasol. The petals fold about this pistil, protecting it from the wind or rain. Insects creep in and fertilize the stigmatic part of the umbrella, which is underneath. The leaves are lined with hairs, and for the same purpose as those of the jack-in-the-pulpit.

2. A bog plant with sticky leaves. This sticky fluid traps flies, and the leaves eat or absorb the flies. An example of a meat-eating plant; there are several. The leaves close around an insect and do not open again until the insect is wholly eaten. The blossoms are tiny and are fertilized by tiny woodland flies and gnats. Called sundew because the gluey juice shines in the sun like dewdrops.

TUMBLEWEED CHILDREN

Not far from the Ragweed and the Maple stood a little Oak, and along the roadside stood funny, ball-shaped plants, as brown and dry as the long autumn could make them. Now, the Oak had not heard the conversation between the Ragweed and the Maple, otherwise she would have minded her own business, which is a good thing for everybody—plants, people, and all—to do.



Said the Oak to the ball-shaped plants: "Why do you stand there shivering in the autumn cold? These October nights have frozen you through already."

The Tumbleweeds—the ball-shaped plants—rolled their funny round heads around and looked up at the Oak. "You amuse us," they replied, complacently.

"Well, did ever I hear such insolence?" said the Oak to herself. "To speak to me, an Oak, like that!"

"Not always the tallest people know the most," answered the Tumbleweeds.

"Very true," answered the Oak, "but you might grant that tall people who can look out across the fields may know something."

"O, certainly," answered the Tumbleweeds.

"I speak only for your good," added the Oak. "As from my high station I look about over the earth, I see that nearly every plant has sent its seed babies off to find homes for themselves; the babies have obeyed, and most of them are fast asleep waiting for the springtime to come again. I fear that your seed babies will be chilled through and through, and that there will be no life left in them."

The Tumbleweeds looked into the cradles of their seed babies and laughed to think that anyone should think that there was no life left in them.

"Don't worry, Oak," said the Tumbleweeds; "our babies are still very much alive. Wait until the right kind of a day and you will see them flying away to find homes for themselves; and, indeed, I think you will find they will travel much farther than your seed babies ever thought of traveling."

The Oak was a little sensitive on the subject of traveling, for it was true that unless some one picked up her babies and carried them away, they were quite apt to sink into the ground, and not far from her very feet; and this was not what she would have liked them to do.

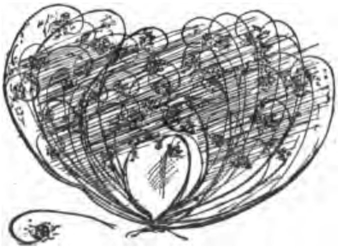
Therefore she peeped down through the holes in her leaves at the Tumbleweeds and said no more.

That very night a strong October wind arose. "Come on, come on," she heard the wind call. "Come on, come on, Tumbleweeds! Come on, come on, Ragweeds! Come on, all kinds of late seed babies! Come on, come on!"

Then followed a crackling and a snapping and a splintering; and lo! in another moment the roadway was alive with funny little round balls of something, flying before the wind like mad. On, on, on the little balls flew, rolling over and over, chasing each other and tumbling head over heels. They didn't even stop to say good-by to the Oak. Indeed, how could they when the mother plant went along with them, tumbling and rolling, rolling and tumbling, until in an hour not a sign of them was to be seen?

"Really," said the Oak to herself, "these foolish little weed plants seem, after all, to have more wisdom than we give them credit for."

Whereupon the Oak learned the lesson—so hard for most *people* to learn—that other people's ways may be quite as good, if not better, than our own.



THE STORY OF A LEAF

ONCE upon a time there was a pretty little leaf. There were drops of shining water upon the leaf which may have been dew—or they may have been tears, for the leaf looked very sad.

"What is the matter, little Leaf?" said the Twig upon which the leaf grew.

And the Leaf said: "The wind just told me that one day he will pull me off and throw me on the ground to die."

"How sad!" said the Twig.

Then the twig told it to the branch on which it grew, and the branch told it to the tree. And when the tree heard it it rustled all over and sent back word to the leaf: "Do not be afraid. Hold on tightly. You shall not go till you wish to."

So the leaf stopped sighing, and went on dancing and singing. Every time the tree shook itself, and the little twig shook itself, and the branches shook themselves, the little leaf danced up and down merrily, as if nothing could ever pull it off. And so it grew all summer long until October.

And when the bright days of autumn came the little leaf saw that all the leaves were growing very beautiful. Some were yellow, and some were scarlet, and some were striped with bright colors. Then the leaf asked the tree what it meant. And the tree said: "These leaves are getting ready to fly away; and they have put on these beautiful colors because of joy."

Then the little leaf began to want to go too. It grew very beautiful thinking about it; and when it was very red and yellow and saw that the branches of the tree still had no color the leaf said, "O, Branches, why are you lead-colored, when we are golden?"

"We must keep on our work-clothes, for resting time is not come for us yet. Your clothes are for holiday, because your tasks are over."

Just then a little puff of wind came, and the leaf let go without thinking. Then the wind took it up and turned it over and over, and whirled it like a spark of fire in the air.

"What fun!" laughed the Leaf. "I am playing; but I am very sleepy."

Then the wind dropped the leaf gently down beneath the edge of a fence among hundreds of leaves, and it fell into a dream, and never waked up to tell what it dreamed. But O, how good it felt to cuddle down in the soft earth!

"Thank you, kind Wind, for bringing me here to sleep in this soft, brown bed."

Beecher (*adapted*).

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